

ICEST 2021**II International Conference on Economic and Social Trends for Sustainability of Modern Society****PRACTICAL USE OF ECONOMIC PROFIT TO ASSESS THE
EFFECTIVENESS OF ACTIVITIES**

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Abstract

The efficiency of a commercial enterprise is usually estimated in terms of absolute profit indicators and relative profitability indicators according to the accounting financial statements on the basis of explicit costs. In accounting, implicit costs are not considered, respectively, economic profit is not analyzed. The indicator of economic profit has been known in economic theory for a long time, but it has not received a practical application and place among the indicators of economic analysis. Accounting for lost profits based on the average rate of return on invested capital is used in the analysis of any type of market. In the current conditions of development of the Russian economy, with the current level of competition, we consider it necessary to introduce the indicator of normal and economic profit and the corresponding indicators of profitability in the practice of economic analysis. The article presents the results of a study of the use of indicators of normal and economic profit and profitability to assess the effectiveness of organizations, justifies the need to use microeconomic indicators in the practice of accounting and economic analysis to increase the reliability of the results of the analysis. The research will contribute to the achievement of the goal of increasing the reliability of conclusions based on the results of economic analysis by solving the problems of increasing the applied orientation of indicators of economic theory and improving the methodology of economic analysis of financial results.

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Keywords: Business efficiency, economic profit, methodology of economic analysis of financial results, net profit, normal profit



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1. Introduction

With the transition of Russia to a market economy, the methods of management and the needs of the management system for high-quality data have changed. Economic theory describes all possible situations of behavior of economic entities, ways of finding the optimum of consumers and producers. Economic theory offers economic models that allow you to choose the right solution to achieve profit and maximize it. Economic analysis, designed to provide the enterprise management system with high-quality and useful data, is also being improved. The analysis indicators, their calculation methods, and information sources are changing. The relationship between economic theory and economic analysis has been growing in recent years, but educational publications in the field of economic analysis do not contain methods for analyzing the activities of organizations based on indicators of economic theory. This is especially true for the methods of analyzing financial results. The long-known indicator of economic profit in Russia is not described in any way and is not used in assessing the effectiveness of activities. Meanwhile, this indicator is the key for making management decisions about the possibility of continuing activities in this area. The formation of a methodology for analyzing business performance based on indicators of economic theory and its testing is a necessary task, the solution of which will increase the reliability of the conclusions of economic analysis.

2. Problem Statement

The use of economic profit for the analysis of financial results and business efficiency raises a number of questions of theoretical and practical content.

The analysis of publications allows us to note that economic and normal profit are considered within the framework of economic theory, however, the existing methods of economic analysis do not contain indicators calculated on the basis of lost profits. In accounting and reporting, these indicators are also not considered both in theory and in practice.

This topic is interesting and promising for further research. In particular:

- Determination and calculation of the value of economic and normal profit;
- Use of economic and normal profit to analyze the financial results of the organization.
- We shall consider each problem below.

2.1. Determination and calculation of the value of economic and normal profit

Russian and foreign scientists are conducting research on this issue.

Fischer et al. (1999) emphasize “the need to identify alternative cost of using a resource, which can be obtained in the best alternative use of the resource” (p. 131). Ilyashenko (2016) believes that the normal profit is "this is the minimum rate of return on invested capital that any person engaged in economic activity" (pp. 91-92). Raizberg et al. (2019) consider normal profit as the average level of return on invested capital that can be obtained by using capital, for example, in real investment.

Also, Raizberg et al. (2019) define normal profit as the level of profit sufficient to maintain break-even production and sale of goods, including taking into account the costs of the entrepreneur himself (the costs of his personal labor, the use of personal property), which are not reflected in the accounting documentation.

Thus, economists agree on the need to take into account alternative uses of the organization's resources and determine the normal profit of the organization, and with it, the assessment of economic profit. At the same time, there are no clear methods for determining the alternative cost of using resources, the minimum rate of return on invested capital.

2.2. Use of economic and normal profit to analyze the financial results of the organization

The source of information for the analysis of financial results is the accounting financial statements of the organization. The financial statements do not contain data on the alternative cost of using resources, the amount of normal profit or economic profit (Ministry of Finance of the Russian Federation, 2010). Traditionally, the methods of analyzing financial results include the analysis of indicators of profit from sales, net profit and profitability based on these indicators (Voitolovsky et al., 2020). Vorozhbit et al. (2018), Rodina (2021), consider the analysis of the marginal profit of the organization, which is also calculated without taking into account the economic profit. The indicators of economic and normal profit are also not used when monitoring the internal processes of the organization (Vorozhbit & Bakhireva, 2020). The world-famous EBIT (earnings before interest and taxes) indicator, used to compare the performance of companies around the world, is calculated through profit before tax and the amount of interest payable on a bank loan. This indicator is used to calculate economic profitability, but it does not meet the requirements of our study, since economic profit is calculated through accounting profit, reduced by all explicit costs. Interest on the loan and income tax are clear costs. A popular and very important indicator of return on equity (ROE) is calculated as the ratio of net profit to the average annual amount of equity. This indicator is also often used to determine the effectiveness of investment. The disadvantage is that the net profit includes the share of the profit received from the use of borrowed capital, while the borrowed capital is not taken into account in the calculation of profitability. The inclusion of indicators of economic and normal profit in the existing methods of analyzing financial results is necessary for evaluating the effectiveness of the organization's activities and the subsequent adoption of reliable management decisions based on the results of the analysis.

3. Research Questions

In course of the study the following questions were raised:

- What is the role of economic profit in evaluating business performance?
- To what extent do the accounting statements meet the requirements of economic profit analysis?
- What is the possibility of practical calculation and analysis of the economic and normal profit of organizations?

4. Purpose of the Study

It is assumed that the answers to the above questions will help to achieve the goal - to increase the reliability of conclusions based on the results of economic analysis by solving the problems of achieving the applied orientation of indicators of economic theory and improving the methodology of economic analysis of financial results.

5. Research Methods

The authors used universal methods of scientific research as well as methods of economic analysis.

5.1. Calculation of economic and normal profit according to the accounting statements of the organization

The definition of normal profit in the works of various authors suggests that the minimum value of normal profit can be calculated by multiplying the cost of capital invested in the business by the average interest on bank deposits. The mathematical calculation of normal profit is related to economic profit. In particular "economic profit is calculated as the difference between the gross income (revenue) from the sale of products and the total (explicit and implicit) costs of the company" (Rodina, 2021, p. 120). Thus the formula of economic profit has the form:

$$\text{Income} - \text{Explicit costs} - \text{Implicit costs} = \text{Economic profit} \quad (1)$$

or

$$\text{Accounting profit} - \text{Implicit costs} = \text{Economic profit} \quad (2)$$

Maximova (2021), Shimko (2020) propose a similar algorithm for calculating economic profit and normal profit.

Normal profit exists in two cases: when the economic profit is a positive value, or when the economic profit is zero:

$$\text{Accounting profit} - \text{Implicit costs} = 0 \quad (3)$$

in this case

$$\text{Accounting profit} = \text{Implicit costs} \quad (4)$$

In this expression, "0" means zero economic profit. In such a situation, it is said that the company receives a normal profit, which is measured by the amount of implicit costs (for example, the average industry level of return on invested capital).

Explicit costs (accounting costs) are reflected in the statement of financial results of the organization. They are defined as the amount of external resources consumed by the organization, i.e. resources that are not owned by this company. For example, the cost of materials, fuel, wages to employees, depreciation of fixed assets, etc.

Implicit costs are determined by the cost of internal resources owned by the organization. Implicit costs are the amount of funds that can be obtained with an alternative use of assets. For example, assets can

be sold, cash invested in a bank at interest, or assets can be leased. In the financial statements of Russian enterprises, the accounting profit corresponds to the amount of net profit. To determine the economic profit, it is necessary to subtract the amount of implicit costs from the net profit. Implicit costs can be calculated as the product of the average annual amount of invested capital (equity and debt) and the average bank interest on deposits (r):

$$\text{Implicit costs of the organization} = \text{The average annual value of the invested capital} \cdot r \quad (5)$$

The resulting amount of implicit costs reflects the amount of the normal profit of the organization:

$$\text{Normal profit} = \text{Average annual amount of invested capital} \cdot r \quad (6)$$

We consider it necessary to take the amount of both own and borrowed capital when calculating. Both types of capital are involved in creating the profit of the organization. The cost of capital is reflected in the balance sheet of the organization.

The simplest formula for calculating the minimum value of normal profit (6) is presented. To improve the accuracy of the calculation, it is necessary to deduct the amount of tax on income from investing funds at a percentage:

$$\text{Normal profit after tax} = \text{The average annual value of invested capital} \cdot r - \text{Tax} \quad (7)$$

Given the available data on alternative uses of the organization's funds invested in assets, this formula can be detailed by factors, depending on the direction of use of the organization's assets. For example, part of the assets can be leased, another part can be used to provide services, a third part is invested in a bank at interest, and a fourth part is invested in securities of other enterprises.

5.2. Analysis of the economic and normal profit of the organization

To determine the effectiveness of the business, it is necessary to analyze the profit indicators by comparison (Table 1). For the calculation, we use the minimum amount of normal profit, calculated on the basis of bank interest on deposits.

Table 1. Business performance assessment based on comparison of accounting and normal profit

Accounting profit		Normal profit after tax		Economic profit (loss)	Business valuation
Net profit (based on the statement of financial results)	>	Interest (other income) on invested capital – Tax on income from investment of funds	=>	Positive economic profit	The business is successful
Net profit (based on the statement of financial results)	=	Interest (other income) on invested capital – Tax on income from investment of funds	=>	Zero economic profit	Investing in this business is no worse than other alternative investments
Net profit (based on the statement of financial results)	<	Interest (other income) on invested capital – Tax on income from investment of funds	=>	Negative economic profit (economic loss)	Investing in this business is worse than other alternative investments

If an enterprise receives a positive value when calculating economic profit, then its accounting profit contains not only normal profit, but also the same economic profit obtained in excess of normal due to competitiveness and efficient business management. Such an enterprise can be proud of its success and compares favorably with other enterprises in the industry. If we get zero economic profit in the calculation, therefore, the company provides itself with an average percentage of the invested capital, the business is quite successful, but it is worth thinking about the possibilities of more efficient use of resources to reduce the cost of production or about ways to increase income, which would lead to profit growth, economic profit, and increased competitiveness. Negative economic profit indicates inefficient business management. This company needs urgent measures to increase its accounting profit to the level of normal profit or to leave the market. If an assessment of the effectiveness of an individual entrepreneur's business is carried out, the costs of the entrepreneur's salary should be taken into account in the explicit and alternative costs (Laskina, 2017). The indicator of economic profit can be supplemented by a relative indicator of the return on invested capital, calculated as the ratio of economic profit to the average annual cost of invested capital. The value of the profitability indicator greater than zero indicates the receipt of a positive economic profit. A value less than zero indicates an economic loss. A zero value is possible if there is zero economic profit and there is a normal profit.

5.3. Practical calculation and analysis of the effectiveness of the organization's activities with accounting and economic profit

We present the results of the analysis of various enterprises, using data on net profit from the financial results report and data on the average annual amount of invested capital (equity and debt capital) from the balance sheet. The lost profit (implicit costs), which is included in the concept of normal profit, is calculated as the interest income on the capital invested in the business (the product of the average annual value of the invested capital of the enterprise and the bank rate on deposits).

Table 2 presents data on the performance indicators of the Joint-Stock Company "Altayvagon". The main activity is the production of non-self-propelled railway cars, the provision of services for the repair, maintenance and alteration of railway cars.

Table 2. Performance analysis of "Altayvagon" JSC

Indicator	Year			Growth or decline	
	2017	2018	2019	2018 / 2017	2019 / 2018
1. Net accounting profit, RUB millions	-347	1249	5336	1596	4087
2. Average annual cost of equity, RUB millions	1912	2362	3704	450	1342
3. Average annual cost of invested capital, RUB millions	4851	3906	4000	-945	94
4. Rate of return on invested capital (bank interest on deposits), %	6	7	5	1	-2
5. Normal profit after tax (p. 3 · p. 4 – p. 3 · p. 4 · 20%), RUB millions	233	219	160	-14	-59
6. Economic profit (loss) (p. 1-p. 5), RUB millions	-580	1033	5176	1613	4143
7. Return on equity (ROE = p. 1 / p. 2 · 100), %	-18.2	53	144	71.2	91
8. Return of invested capital on economic profit (p. 6 / p. 3 · 100), %	-12	26	129	38	103

Starting from 2018, the company's net profit is growing, and the normal profit for the study period is decreasing due to a decrease in the deposit rate and due to a decrease in the amount of invested capital. The economic profit in 2018-2019 is positive, which confirms the efficiency of doing business by the analyzed enterprise. Return on equity (ROE) in 2018-2019 is also high. The optimal value of this indicator is equal to the bank deposit rate multiplied by the difference between the unit and the income tax. For our study period, this is 5.2% in 2017, 6.2% in 2018, and 4.2% in 2018.

5.4. Practical calculation and analysis of the efficiency of an organization with an accounting and economic loss

Table 3 shows the performance indicators of the Limited Liability Company "Altayzdravnitsa" Sanatorium "Lazurny". The main activity is the activity of health resort organizations.

Table 3. Analysis of the effectiveness of the activity of "Altayzdravnitsa" Sanatorium "Lazurny" LLC

Indicator	Year			Growth or decline	
	2017	2018	2019	2018/ 2017	2019/ 2018
1. Net accounting profit, RUB thousands	-51	-136	-310	-85	-174
2. Average annual cost of equity, RUB thousands	261	167	-56	-94	-233
3. Average annual cost of invested capital, RUB thousands	18846	27134	24259	8288	-2875
4. Rate of return on invested capital (bank interest on deposits), %	6	7	5	1	-2
5. Normal profit after tax ($p. 3 \cdot p. 4 - p. 3 \cdot p. 4 \cdot 20\%$), RUB thousands	905	1520	970	615	-550
6. Economic profit (loss) ($p. 1 - p. 5$), RUB thousands	-956	-1656	-1280	-700	376
7. Return on equity ($ROE = p. 1 / p. 2 \cdot 100$), %	-20	-81	-554	-61	-473
8. Return of invested capital on economic profit ($p. 6 / p. 3 \cdot 100$), %	-5	-6	-5.3	-1	-0.7

During 2017-2019, the organization suffers losses associated with low competitiveness. In 2018, investments in fixed assets were increased in order to expand the types of services provided, but due to high interest rates on loans taken out, the loss is growing. Accordingly, the indicators of loss of equity capital on net profit have a negative trend. The loss of invested capital in terms of economic profit is much lower, at about 6%. In the future, the company's management expects a return on the invested capital, but an active advertising policy is required.

5.5. Practical calculation and analysis of the effectiveness of the organization's activities with net accounting profit and economic loss

Table 4 shows the results of the analysis of the financial results of the closed joint-stock company "Volchikhinsky Brewery", engaged in the production of soft drinks.

Table 4. Analysis of the efficiency of "Volchikhinsky Brewery" CJSC

Indicator	Year			Growth or decline	
	2017	2018	2019	2018/ 2017	2019/ 2018
1. Net accounting profit, RUB thousands	3722	-18772	578	-504.3	-3.08
2. Average annual cost of equity, RUB thousands	328696	320053	310956	-8643	-9097
3. Average annual cost of invested capital, RUB thousands	352046	335553	317956	-16493	-17597
4. Rate of return on invested capital (bank interest on deposits), %	6	7	5	1	-2
5. Normal profit after tax (p. 3 · p. 4 – p. 3 · p. 4 · 20%), RUB thousands	16898	18791	12718	1893	-6073
6. Economic profit (loss) (p. 1 – p. 5), RUB thousands	-13176	-37563	-12140	-24387	25423
7. Return on equity (ROE = p. 1 / p. 2 · 100), %	1.1	-6	0.2	-7.1	6.2
8. Return of invested capital on economic profit (p. 6 / p. 3 · 100), %	-1	-11	-4	-10	7

According to the accounting statements, "Volchikhinsky Brewery" CJSC had a loss on the results of its activities only in 2018, however, taking into account the implicit costs, the company received an economic loss for all three analyzed years. The company produces high-quality products, but in the conditions of competition in the market of soft drinks, effective business is possible only with the constant updating of the range, the development of new types of products.

6. Findings

The conducted research allows us to conclude that it is necessary to introduce into the practice of economic analysis indicators of economic theory, such as normal and economic profit. This requires a methodology for conducting economic analysis. The methodology of economic analysis is defined as a system of methods and rules for conducting analytical research aimed at achieving the set goal of analysis. The methodology for evaluating the effectiveness of doing business based on economic and normal profit is shown in Table 5.

Table 5. The main characteristics of the methodology for analyzing the effectiveness of conducting business on the basis of economic and normal profit

Purpose of the analysis	Improving the reliability of the assessment of the effectiveness of the organization's activities
Analysis issues	Assessment of the normal and economic profit of the organization
Objects of analysis	Organizations that generate accounting financial statements
Indicator system	A set of indicators for analyzing financial results
Research stages	Determination of the average rate of return on invested capital in the industry; Calculation of the normal profit according to the accounting financial statements and the average rate of return on invested capital; Calculation of absolute and relative indicators based on economic profit; Registration of the results of the analysis and making management decisions based on the results of the analysis.
Frequency of analysis	As needed, at least annually.
Methods for studying the objects of analysis	Analysis of absolute indicators; horizontal reporting analysis; coefficient analysis; comparison method
Data sources	Balance sheet, statement of financial results
Subjects of analysis	Internal analysts – the management of the organization and external analysts represented by investors
Description of the analysis results	Tabular form of presentation of results

The practical calculation and analysis of indicators based on the above-described methodology allowed us to identify significant differences in the conclusions based on the results of the analysis conducted using traditional indicators of economic analysis and indicators of economic theory. Thus, in the case of "Altayvagon" JSC in 2017, the economic loss was 67% higher than the net loss of the organization. In 2018 and 2019, economic profit was lower than net profit by 17% and 3%, respectively. The return on invested capital calculated on the basis of economic profit is also lower than the return on equity calculated on the basis of net profit.

The activity of "Altayzdravnitsa" Sanatorium "Lazurny" LLC is unprofitable in terms of net profit and even more unprofitable in terms of economic profit. ROE has negative values for all three years of the study, but the return on invested capital on economic profit is several times higher, which pushes management to make effective decisions and expect the situation to improve.

"Volchikhinsky brewery" CJSC according to the report on financial results has a net loss only in 2018. The calculation of the economic profit showed the unprofitability of the activity during the entire period of the study. This should be taken into account by the management, the conduct of the activity is not effective compared to the alternatives.

7. Conclusion

The conducted research proves the need for the practical application of the indicators of the economic theory "economic profit" and "normal profit" for the correct analysis of the profitability and profitability of organizations. According to the study, a simple calculation based on accounting data allows you to determine the economic profitability or unprofitability of an enterprise. Accounting statements are traditionally and universally used for financial analysis. In addition to this analysis, the assessment of economic profit makes it possible to assess the actual efficiency of doing business in the enterprise in comparison with the alternative use of the invested capital.

In the course of the research, a methodology for analyzing business efficiency based on economic and normal profit is proposed, formulas for calculating absolute and relative profit indicators are presented, and the results of testing the methodology on the example of three enterprises are shown. The first company - "Altayvagon" JSC - is profitable both according to the accounting reports and according to the results of the analysis of economic profit. The second company - "Altaizdravnitsa" Sanatorium "Lazurny" LLC - has a net accounting loss and an economic loss, but the return on invested capital on economic profit allows the management to hope for a correction of the situation in the future. The third company - "Volchikhinsky Brewery" CJSC - is profitable according to accounting calculations, but in fact has a significant economic loss. This situation threatens the company with closure.

The results of the study confirm that the traditional methods of economic analysis should be supplemented with analytical indicators of economic theory, which will both improve the methodology of financial analysis itself for internal and external users, and expand the applied value of indicators of economic theory and improve the quality of conclusions and recommendations based on the results of the analysis.

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