

The impact of non-financial factors on the overall efficiency of production organizations

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Introduction. Relevance of the study

The analysis of the statistical relationship between the non-financial characteristics of the company's activities and its financial results for the reporting period in the last decade has attracted more and more attention from researchers. The developing practice of non-financial reporting by companies and the creation of international standards for its formation have played a major role in intensifying research in this area [1]. A lot of work is especially devoted to the topic of assessing the relationship with the functioning of a business of its ESG indicators [2]. Currently, almost no one doubts the fact that non-financial reporting indicators in many cases make it possible to obtain a more complete assessment of an organization than based solely on financial statements for a wide range of tasks solved by an appraiser.

The effectiveness of an organization's activities is usually understood as the ratio of the volume of products produced to the volume of resources consumed in the production process. Managing the effectiveness of an organization's business activities is an important task of its financial management, and evaluating effectiveness is of great interest to potential partners, counterparties, and investors. It is generally accepted that the value of efficiency characterizes the quality of an organization's management, in particular, financial management. At the same time, the task of evaluating effectiveness does not have a universally recognized universal solution. There are many private solutions tied to the evaluator's local tasks.

The authors of this study rely on the technology for evaluating the effectiveness of an organization, proposed by them and tested in a number of previous studies [3, 4, 5], which significantly expands the possibilities of traditional approaches to evaluating this indicator.

This study is devoted to an empirical analysis of the statistical relationship between the overall effectiveness of organizations represented in the production segment of the Russian economy and a number of characteristics of their activities that are not included in traditional financial reporting. These include the size of the organization, whether the organization has intellectual property, the use of leasing, etc. In particular, such indicators include the cumulative assessment of the reliability of a company, calculated on the basis of publicly available information about the activities of a legal entity.

Methodological basis of the research

The overall effectiveness of organizations is assessed using the technology proposed by the authors of the study in a number of previous papers and based on the generalization of the results of the technical efficiency assessment using data envelopment analysis (DEA). The effectiveness assessment is formed by the following steps:

1. The set of organizations involved in the assessment are being formed;
2. The possible sets of resources consumed (inputs) and products produced (outputs) are formed in accordance with the set of tasks solved by potential appraisers.
3. Based on the formed sets of inputs and outputs, a variety of data envelopment analysis models are formed;

4. Technical efficiency (private efficiency) indicators are calculated for all selected organizations using all previously formed models;
5. The obtained indicators are aggregated using the Principal Components Analysis;
6. The First Principal Component acts as a metric of the overall effectiveness of organizations.

This approach allows one to obtain comparative performance estimates for the entire set of organizations involved in the study, which is one of its advantages over metrics such as return on assets or return on equity. The generalization of the traditional concept of technical efficiency proposed by the authors makes it possible not only to compare the efficiency of resource consumption in the production process of various organizations, but also to reveal the reasons for achieving a particular level of efficiency. It becomes possible to compare the effectiveness of organizations that demonstrate the same maximum possible efficiency for certain shell analysis models.

Empirical research base

The empirical basis of the study is financial reporting data and the values of non-financial indicators presented in the SPARK (Interfax) information and analytical system for manufacturing organizations for 2020-2023. This interval was chosen in order to assess the impact of sanctions processes on the relationship between overall efficiency and business quality. The organizations were selected based on the OKVED 2 codes. Organizations that closed or were created during this period, as well as organizations with negative pre-tax profits, were removed from the resulting training set. Based on the data obtained, the overall efficiency indicator was calculated.

The results of the study

The main result of the study is the identification of a set of non-financial determinants of overall efficiency, both independent of management and available for change by the management of organizations. A significant relationship with overall efficiency was found in such indicators as the size of the organization, the tax system, the use of leasing by the organization, the availability of property as collateral, etc. In particular, it was found that in 2021, higher organizational risk was associated with higher overall efficiency. However, by the end of 2022, organizations with higher risk have most noticeably reduced their effectiveness. In 2023, the situation began to recover. Thus, based on the results of the study, recommendations can be formed to improve the effectiveness of organizations. Among other things, the nature of the impact of sanctions on overall effectiveness in the context of the non-financial characteristics of their activities has been determined.

Literature

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