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Development of analytical tools for assessing the performance of construction organizations based on the cost management concept

The activities of construction companies are characterized by high resource and capital intensity of products. There are many standards regulating the quality of construction products and technological processes. In addition, construction is characterized by high risks, unstable cash flows, dependence on many external factors inherent in an unstable economy. To ensure sustainable development, it is necessary to have an analytical toolkit focused on the constant search for reserves and capable of systematically and comprehensively reflecting all the problems of the organization. The modern system of complex analysis of economic activity, applied methods and indicators, in general, meet the requirements. This also applies to the methods of rating assessment of companies. According to the authors, it is necessary to improve the system by applying the market capitalization indicator. It requires an annual valuation of the company. The system of business valuation methods reflected in the valuation standards and works of domestic economists requires adaptation to the specifics of construction companies. The article considers the peculiarities of construction activity from in terms of assessing the market value of the company, analyzes approaches and methods of valuation, reveals the peculiarities of application in construction.

Keywords: analytical system of construction organizations, main subsystems, directions of development, cost management concept, specifics of construction business valuation, valuation methods

INTRODUCTION

The constant complication of business environment requires new approaches to sustainable development. Correct setting of goals and their timely adjustment is necessary. The organization cannot influence many external factors, but they must be taken into account. This requires a properly organized analytical system.

The analytical toolkit for assessing the performance of organizations is constantly improving and covers almost all management subsystems. The main directions and subsystems of complex analysis of production and economic activities were formed by the scientific school of A.D. Sheremet, who first developed the theory and methodology of complex economic analysis of enterprise activity. The analytical system contains indicators that practically cover all aspects of the production and economic activity of an enterprise. In particular [1]:

- indicators of income and sales of products;
- indicators of costs and cost of sales;
- indicators of technical and organizational level and other business conditions;
- indicators of efficiency of current and non-current assets;
- indicators of financial position and solvency.

Improvement of the system of indicators continues taking into account the changing business conditions [2–4]. The system of indicators in the author's interpretation does not reflect the specifics of a particular type of business, but it has been developed in modern research and adapted to the activities of construction companies [5, 6]. The system of the above indicators is focused on current management and allows to

identify reserves, plan and implement measures to improve the efficiency of activities.

The system of rating assessment of enterprises' activities has been developed and adapted to the activities of construction organizations. The system reflects not only the interests of the organization itself, but also their environmental and social responsibility, the interests of investors, which affects the competitive position of the organization in the contract construction market. The rating system is used to evaluate the performance of construction organizations not only from the standpoint of internal, but also external factors, and allows timely identification of strategic reserves.

The third direction in the development of the analytical system is the assessment of the company's market capitalization. It does not replace, but only complements the above directions. The market value of an enterprise as an indicator can be used not only for market transactions, but also for measuring the performance of an enterprise. This approach is used in foreign management practice.

The growth of value shows how effective the management system is. The indicator reflects in an integrated way both negative and positive impact of external and internal factors, factors of direct and indirect impact, intensive and extensive factors and the ability of the management system to effectively use the opportunities and adapt to the threats of the business environment. This convinces of the need for further improvement of the toolkit for assessing the market value of an enterprise for management purposes.

The cost management concept opens new opportunities for the development of analytical tools. Company value management is focused on

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▶ the interests of shareholders in order to increase the value of the company and includes the processes of creating, managing and measuring business value¹. The system is different from management focused on profit growth. The system based on the growth of the company's market capitalization. The choice of valuation methods requires reflecting the specifics of the business and, in particular, its industry affiliation.

Increasing the value of a company means managing the factors that affect its value. These factors can be divided into internal factors, which are influenced by the organization itself; and external factors. External factors can affect the value of a business, independently of internal ones, reflect not only threats, but also new business opportunities. External factors should be forecasted and possible risks should be taken into account. There are methods of strategic analysis to identify factors and take them into account to maintain economic sustainability.

The assessment of the market value allows to take into account all factors comprehensively. Market capitalization ratio is able to supplement the system of analytical business indicators for the current management and rating of the company for participation in auctions and investment attraction. The formation of this indicator requires an annual assessment of the market value of the enterprise, selection of a reasonable valuation method that reflects the specifics of construction activities.

ANALYSIS OF MARKET VALUE METHODS

The Federal standard for Business Valuation provides for the application of cost, comparative and income approaches to determining the market value of an enterprise². The object of assessment in accordance with the requirements of the Federal Standard may be the property complex of the organization or part of it. The property complex must be identified.

Business valuation tools are given not only in the valuation standards, but also find constant development in the works of scientists [7–10]. Standard approaches and valuation methods require taking into account the specifics of construction, taking into account the peculiarities of the functioning of the construction industry itself, as well as the real estate market. With regard to the choice of valuation tools, these features appear in instability of the activities of construction companies due to a number of factors, in particular:

- long investment and construction cycle;
- demand for construction products depends on the development of the region;
- the need for a significant amount of investment;
- problems related to the allocation of land for construction;
- unstable cash flows during the investment and construction period;
- regulated requirements to the quality of construction products and construction processes;
- high requirements for the business reputation of a construction company that affect the results of tenders;
- cash flows of construction companies reflect the economic situation in general;
- limited opportunities for market diversification.

Consider the possibilities and peculiarities of application of standard approaches to evaluation of construction companies for management purposes. The cost (property) approach is focused on the calculation of net assets. In this case, assets and liabilities are taken into account not at book value, but at market value. The assessment will reflect the property status of a particular organization and the structure of its obligations.

A company that has construction machinery, equipment and other fixed assets on its balance sheet will receive a high market assessment. Otherwise, the valuation will be undervalued. At the same time, it should be taken into account that construction companies often use leased fixed assets in the production process, focusing on the economic feasibility of leasing. This has the effect of reducing costs and increasing the profitability of the company.

The net asset method can objectively reflect the property status of the company on the basis of market, rather than balance sheet indicators. In this case, the method regulated by the document "Procedure for determining the net asset value"³. The importance of calculating this indicator lies in the fact that it is controlled by the tax authorities. Net assets should not be less than the authorized capital of the company. By conducting a market valuation of assets, a company can avoid problems and timely find reserves aimed at eliminating the discrepancy.

The comparative (market) approach is based on sales information from similar companies. The market multiples thus obtained (value/profit; value/income) are taken into account when calculating the market value of the subject company. Information about the sales of companies can be closed and the income received is distorted. In addition, the market for such enterprises is not active, which makes it difficult to apply the comparative approach.

The income approach is focused on determining the value on the basis of expected future cash flows or other economic indicators. Each of the applied valuation methods has peculiarities, advantages and disadvantages. The analysis of methods allows to justify the choice of evaluation tools within the framework of the cost concept of management, to identify reserves [8].

In our opinion, when evaluating the market value for management purposes, it is advisable to take the income approach as the dominant one. The choice of a specific assessment method must be justified. The most common methods of income approach are: net profit capitalization method; discounted cash flow method; excess profit method. Each of the listed methods has features, advantages and disadvantages, the analysis of which makes it possible to justify the choice of valuation tools within the framework of the cost management concept, to identify reserves. These features are shown below (Table).

The given characteristics predetermine the choice of the evaluation method. To assess the construction business, taking into account all the features of its functioning, a high level of risk, cash flow instability, the discounted cash flow method can be used (1).

$$C = CF + CT,$$

(1)

where C — the market value of the business;
 CF — discounted cash flow of the forecast period;
 CT — terminal value of the post-forecast period.

1

Company value management. URL: <https://blog.iteam.ru/upravlenie-stoimostyu-kompanii/pdf> (rus.).

2

Federal valuation standard "Business valuation". Approved Order of the Ministry of Economic Development of Russia No. 326 dated June 1, 2015. URL: [ootvetstvie-fso/62-fso-8-otsenka-biznesa](https://oos.fso.gov.ru/otvetstvie-fso/62-fso-8-otsenka-biznesa) (rus.).

3

The procedure for determining the value of net assets. Approved by Order of the Ministry of Finance of the Russian Federation No. 84n dated August 28, 2014. URL: [olvcency/net_assets.html](https://oos.fso.gov.ru/otvetstvie-fso/62-fso-8-otsenka-biznesa) (rus.).

Peculiarities of applying income approach methods

Income approach methods	Specifics of application
Net profit capitalization method	Method is used to evaluate a stable business. The projected profit for one year is capitalized. The valuation is based on the fact that the level of profit does not change in subsequent periods
Cash flow discount method	The method is used to evaluate businesses with unstable cash flows. The estimate is based on a forecasting cash flow for the period after which the business will reach a stable level. Other approaches to substantiate the forecasting horizon are also possible
Excess profit method	The method is used to evaluate companies with high business reputation, whose profits significantly exceed the industry averages

The method has a number of features. Features must be taken into account in order to obtain a reliable assessment. Firstly, the calculations are based on forecasts, which are difficult in construction due to the large number of risks. With a long-term forecast, the uncertainty of income and costs increases. Secondly, the final result of the assessment depends on the forecast horizon, which requires a reasonable approach to its selection. In particular, there is an approach when the forecasting horizon is taken equal to the period during which a stable level of income [7] will be provided. This is quite justified when it comes to valuation for the purposes of buying and selling a business, which at the valuation stage was characterized by instability of income. For management purposes, the forecasting horizon may be taken equal to the period of contracts concluded by the construction company for the development of residential complexes or other objects.

Thirdly, it is required to substantiate the discount rate to determine the current value of the forecast cash flow and adjust it for risk. In valuation practice, the discount rate is formed on the basis of the current risk-free rate of return on capital. This rate reflects the minimum interest that can be received from investing in risk-free assets with the maximum guarantee of receiving income. Taking the rate as stable for the entire forecast period, a significant error arises in the calculations. Adjustments to the discount rate are made taking into account the risks that have developed at the valuation date. The presence of certain risks is taken into account as a risk premium to the hypothetical buyer. The most typical practice in business valuation are risk premiums of insignificant scale of business; unsatisfactory financial structure of the enterprise; the need to diversify products in response to changing market needs; the need for additional costs to diversify the sales network and customer base; market diversification; inefficient management.

Logically, this set of risks is quite reasonable. Making reasonable cost adjustments is difficult, but necessary within the framework of the application of this method. This requires constant monitoring of the real estate market, the construction market, and assessment of one's own competitive position.

Business instability in construction requires risk identification⁴ [11]. Focusing on the results of research in risk management, we can conclude that, in relation to the activities of construction organizations, when forming the discount rate using the cumulative construction method, it is advisable to take into account the following risks:

1. Business scale risk premium if larger companies operate in the industry market and the scale of their business provides effective management of production costs.
2. Premium for the risk of the financial structure, if the capital structure has a significant share of borrowed funds. For correct

conclusions about the risk of the financial structure, one can focus on the requirements of credit institutions for borrowing enterprises.

3. The risk premium for inefficient management is taken into account if, based on the analysis of profit and profitability indicators, it is determined that these indicators are below the industry average.

The following assumptions can be used to calculate the terminal value, which will determine the choice of calculation method:

- at the end of the forecast period, cash flows will become even; the terminal value is determined by the method of capitalization of the profitability of the post-forecast period;
- at the end of the forecast period, all work under a long-term contract has been completed and the terminal cost is determined by the liquidation balance method.

The specifics of the economic conditions of construction companies allow us to conclude that it is advisable to use the second approach for management purposes.

One of the methods of the income approach is the method of capitalization of the company's net profit. The method is based on the estimation hypothesis that the profit is constant and is projected for a year (2):

$$C = \frac{NP}{CR}, \tag{2}$$

where *C* — market value of the business;
NP — net profit of the forecast year;
CR — coefficient of capitalization of net profit.

This method is suitable for valuing companies with long-term contracts that provide stable income. The problem can arise in the calculation of the capitalization ratio if there is no active market for sales of similar business or shares of companies.

The market value of an enterprise with goodwill can increase significantly. Business reputation (goodwill) as an economic category is characterized by the presence of a permanent clientele, permanent business partners, investors, competitive advantages in product quality, ensuring environmental safety of products and production processes. These items can be valued.

CONCLUSION

The cost concept is relatively new to management in general. This also applies to business activities in the construction industry. The use of standard approaches and methods for business valuation requires taking into account the specifics of construction business, peculiarities of the construction industry functioning. It is necessary to control the factors influencing the competitive positions of construction companies.

4 Tsvetkova E.A. Management of economic risks of a construction organization. URL: <https://cyberleninka.ru/article/n/upravlenie-ekonomicheskimi-riskami-stroitelnyh-organizatsiy/viewer> (rus.).

Studies show that the foundations of the analytical toolkit for the activities of construction organizations have been largely formed. Methods of analysis ensure the identification of problems, the search for reserves, the formation of development directions, and the preservation of the economic stability of organizations. The dynamics of economic activity, the growth of competition in the construction market, ever-increasing requirements for environmental and social responsibility of the construction business require improvement of the analytical system. The market capitalization ratio included in the analytical system characterizes the annual dynamics of changes in the company's market value. This allows to improve the analytical system, focusing it not only on internal management goals, but also on the interests of investors. This is possible only in case of reasonable choice and correct application of the methods of company value assessment existing in the market practice.

In assessing market value, not only the financial stability is important, but also the property condition of the organization. In order to reflect both sides of the activity, it is necessary to use both income and property (cost) approaches. It is quite expected that the market value indicators obtained by different approaches will differ. To generalize the result, it is necessary to determine the weighting coefficients of each approach in the final assessment of the business.

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Развитие аналитического инструментария оценки деятельности строительных организаций на основе стоимостной концепции управления

Деятельность строительных компаний характеризуется высокой ресурсоемкостью и капиталоемкостью строительной продукции, наличием стандартов, регламентирующих не только качество строительной продукции, но и технологических процессов. Кроме того, для строительства характерны высокие риски, нестабильные денежные потоки и зависимость от многих внешних факторов, присущих нестабильной экономике. Для обеспечения устойчивого развития необходим аналитический инструментарий, ориентированный на постоянный поиск резервов и способный системно и комплексно отражать все проблемы организации. Современная система комплексного анализа хозяйственной деятельности, применяемые методики и показатели в целом соответствуют требованиям. Это относится и к методикам рейтинговой оценки компаний. По мнению авторов, необходимо совершенствовать систему за счет применения показателя рыночной капитализации. Система методов оценки бизнеса, нашедшая отражение в стандартах оценки, трудах отечественных экономистов, требует адаптации к специфике строительных компаний. В статье рассмотрены особенности строительной деятельности с позиции оценки рыночной стоимости компании, проанализированы подходы и методы оценки, раскрыты особенности применения.

Ключевые слова: аналитическая система строительных организаций, основные подсистемы, направления развития, стоимостная концепция управления, специфика оценки строительного бизнеса, методы оценки

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