

BUSINESS VALUATION: CLASSICAL AND ADVANCED METHODS

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Abstract. The topic chosen by the authors implies a qualitative rather than quantitative research approach. The aim of this paper is having assessed the value of a particular company using classical and advanced approaches to analyse the evaluation results obtained using different approaches and give recommendations to company managers. To achieve the aim, the following objectives were set: explore different views on the interpretation of the company as a subject of evaluation; analyse the major methods of assessing the value of companies; having gathered empirical data, assess the value of the particular company using classical and advanced methods; conduct a sensitivity analysis by considering factors that influence the valuation of the company.

In the framework of this research, we used the key methods of assessing the value of company's business, based both on classical approaches, such as income approach and comparative approach (market approach), and on more advanced and less studied methods, such as EVA and ROV.

As a result, the possibility of using advanced methods based on economic added value and real options was demonstrated. The results obtained in the framework of various methods are comparable, and the differences indicate the need for further research in this field.

Keywords: *business valuation, company's value, EVA method, real option value.*

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Introduction

In the modern economy, valuation activities are an important and often mandatory addition to business accounting, analysis of company activities, as well as to all legal transactions with property. Valuation of a company is therefore a highly relevant question.

In the current economic situation, where competition between companies is quite high, the issues of managing the value of companies are becoming especially urgent. Companies seek to develop, and management is increasingly concluding that it is possible to maximize the value of the company, taking into account the interests of all stakeholders. These are all persons related to the company: investors, creditors, suppliers, etc. A generally accepted definition was proposed by Freeman back in 1984 (Freeman, 2010a, b). The interests of stakeholders can be divided based on three groups of capital: financial, intellectual and social. The stakeholder approach means that the main goal of the company is to generate profit not only for owners, but also for other stakeholders. Freeman believes that the theory of stakeholders is inextricably intertwined with the theory of entrepreneurship, since the entrepreneurial spirit itself involves the task of figuring out how to satisfy the needs of customers (Radionova-Girsa et. al., 2019), suppliers, employees, society and financiers, which indicates the common interest of the parties involved. Thus, the issues of determining and monitoring the value of the company are quite relevant and require attention both from practicing business appraisers, and from the part of researchers in valuation theory.

Literature Review

Analysing scientific papers, the authors stated different views on the interpretation of the company as a subject of evaluation.

On the one hand, a company can be considered as a property complex, and then all property on the books and intended to carry out its production activities is subject to valuation; on the other hand, the company can be considered as a business that represents a certain value for its owners and is also capable of generating some cash income. In their already classical article, Modigliani and Miller (1958) proved that the value of any firm is determined only by its

future earnings, and therefore does not depend on the structure of capital. The authors of the paper believe that there is a difference between business valuation and company valuation, since business is a specific entrepreneurial activity organized within a certain structure, the economic and organizational form of which is the company (Saksonova and Kantāne, 2016). In practice, business evaluation often covers several companies that are owned by a business entity with all of its aggregated rights and obligations, taking into account existing permits and licenses. In his book, Roche (2005) also distinguished two categories: on the one hand, there is an assimilation of the business valuation of firms with the valuation of property of these firms; and, on the other hand, the valuation of “business lines” as a set of property rights, technologies and assets that provide expected with some probability future income is considered. This suggests that there is no single true, well-defined definition of this concept. Individual aspects of the valuation are subject to consideration, which act as the subject of research in various works. After analysing the opinions of various authors, the authors of the paper believe that assessing the value of any object is a process of determining the value of the object in monetary terms for a specific purpose, taking into account real or future income generated by it in a particular market at a certain point in time.

The valuation of companies or facilities is successfully carried out using three traditional groups of methodologies - income, comparative and cost approaches, each of which involves the use of certain methods. These methods have already become classical. In an ideal situation (i.e., in a perfect market), all three approaches should give the same value for the company, but the real situation is that the markets are mostly imperfect, information can be asymmetric, many market factors can be misinterpreted, as a result of which one or another approach can give a valuation that differs from the valuation obtained in other ways. At the same time, there are various approaches to building the information support necessary for analysing the efficiency of the company in the field of sustainable development (Lvova et. al., 2016)., determining its value, which more or less fully reveal aspects of the organization's economic, social and environmental activities, for example, the guidelines of the society of investment professionals in Germany (DVFA, 2010), European academy of business in society (Grayson et. al. 2009), European accountants (FEA) environmental, social and governance indicators in annual reports (Européens, 2011), UNCTAD guidance on corporate responsibility indicators in annual reports (2008).

The most popular, multifaceted from a practical point of view is the income approach, since it can be easily adapted to analyse various factors that can affect market value. In addition, practitioners consider it the most reliable and accurate. Among its shortcomings there are: labour consuming nature of calculations; probabilistic nature in the results; the difficulty of obtaining information for calculations; high risk; subjective evaluation.

The authors suppose that in general, it can be said that the market value of a company is determined by both financial (growth in sales, investment, cost of capital and operational and financial risks) and non-financial factors (human capital, client capital, communications, innovation, corporate governance). In addition, there is an opinion (Jensen, 2002) that dividing stakeholders into groups to further manage their interests will allow the company to more effectively formulate strategic goals and increase value in the long term. Changing the long-term market value of the company is an estimated measure of success (Saksonova and Koļeda, 2017). Much attention is paid to the analysis of the company's value for shareholders, which, in principle, means a situation when the return on capital is greater than its opportunity cost (Fiordelisi and Molyneux, 2010).

Due to the popularity of these problems, a Value Based Management (VBM) approach is developing in companies. This is the approach that is based on measuring the value of the company, which allows you to take into account its future capabilities. Evaluation of the efficiency of company management can be considered an important element in the selection of policies pursued by company managers. Effective management helps to increase the value of the company, which leads to an increase in investor interest in buying shares in the company. The ability to measure the

actual profit of a company together with the unification of the interests of owners, stakeholders and managers is one of the key ways of practical application of VBM approach methods - (Morin ...). At the heart of VBM is management based on an integrated financial indicator - the company value. The development of this approach is not accidental; it is based on traditional DuPont methods and discounted cash flow (DCF). The idea of interpreting a financial indicator as a set of interrelated parameters, each of which has its own set of coefficients, is taken from the DuPont system. While the DCF method makes it possible to take into account both past and future cash earnings and thus shows the risks that are associated with the uncertainty of the activity.

The principal difference between the VBM approach and classical management methods is that the goal is to increase the value of the company, not current profit. It is possible to highlight the key weaknesses of the classical approaches in terms of the concept of cost management:

- It is focused not on the future, but on the past;
- It is impossible to evaluate the sustainability of financial results;
- It does not show what is happening with the value of the company.

The VBM approach refers to advanced financial management. By the importance of financial indicators, it is possible to distinguish two groups of methods, which, in contrast to traditional classical ones, are considered more advanced. Financial prominence is characteristic of such methods as Economic Value Added (EVA), Shareholder Value Added (SVA), Cash Flow Based Return on Investment (CFROI), Cash Flow Value Added (CVA), Real Option Value (ROV) and some others. However, in some works it is noted that the recommendations of analysts proceed approximately 30% from non-financial criteria as well - taking into account the quality of management and its ability to implement the strategy chosen (Saksonova, Solovjova, 2012).

There is a lot of empirical research on the effectiveness of value-based management. Firk et. al.(2016) use the data on 4288 company-years of companies from the MSCI Europe Index and the S&P 500 Index between 2005 and 2010 and find that value based management does lead to higher company performance defined as residual income after subtracting the cost of capital. Furthermore, the positive effect of VBM is amplified by external factors such as financially oriented ownership and national shareholder focusing. Another approach for studying the effect of VBM on companies has been proposed by Knauer et. al. (2018), who considered mergers and acquisitions between companies practicing VBM and companies that did not. Using a sample of 235 acquisition and divestment announcements of listed German companies between 2003 and 2012, they showed that market reactions to acquisition announcements are more positive for companies that have implemented VB metrics. On the other hand, Firk et. al. (2019) objected the binary division of companies in adopters and non-adopters and instead developed a measure of the extent of VBM implementation (VBM sophistication) showing that it increases if certain company characteristics that increase the benefits of VBM are present.¹

Thus, we can distinguish classical and advanced approaches to company valuation. Consider the theoretical foundations of the practice of applying these approaches in more detail.

It is important to emphasize that accounting and management practices so far did not identify a single preferred approach to company valuation. Pinto et. al. (2019) report the results of a scientific survey of the equity valuation practices of CFA Institute members with equity analysis job responsibilities showing the extent to which different practices are used.

Advanced Company Valuation Methods

Economic Value Added - EVA

¹ See also Ryan and Trahan (2007), Rapp et. al. (2011). Malmi, and Ikäheimo, (2003) provided some early evidence on how VBM practices were actually applied in real companies.

Back in 1982, American analysts J. Stern and B. Stewart developed the method, which has been successfully applied since then in various countries (Stern et. al. 1995). We can say that this particular method is the most popular in the field of company analysis based on economic profit.

When calculating this indicator, special attention is paid to adjustments to book profit and invested capital. This is necessary in order to translate book profit into cash flow, on the basis of which investors make decisions, and also take into account the so-called “equity equivalents”, which allow the book value of invested capital to approach the market value. Most adjustments relate to what EVA developers call “equity equivalents.” These are research and development costs, reserves, deferred taxes and goodwill, or debt equivalents - leasing.

If the EVA value is zero, then this indicates the achievement, acceptability of maintaining such a business on the market, as this means that investors actually receive a return that compensates them for the risk of investments. A negative EVA indicates inefficient use of capital. Permanent operation with the negative EVA is impossible, since owners will seek to withdraw capital from such a company or change the business model, and in the worst case, the business idea itself.

If EVA is positive, then investors' evaluation of expected economic returns over the forecast horizon can be considered favourable.

The major disadvantages of this concept can be considered that:

- Differences in the sizes of the studied companies are not taken into account;
- It is based on accounting indicators;
- It does not reflect the causes of possible problems in the company activities.

In an extensive review of literature, Sharma and Kumar (2010) document several claims made in support of economic value added methodology, which can be separated in two groups: (i) claims that EVA improves internal decision-making and (ii) claims that it is helpful in improving or explaining stock returns.¹ Thus, for example, Shah et. al. (2014) argue that EVA enables managers to take decisions that enhance shareholder value. Agrawal et. al. (2019) study a panel data of 1,700 Indian companies using a mixed effects model and conclude that EVA does explain the annual stock returns of these Indian companies better than traditional accounting-based profitability metrics such as return on assets and return on equity.² On the other hand Kim (2006), find that EVA makes only a marginal contribution in explaining equity market value of hospitality companies beyond earnings and cash flow.

Cash Value Added - CVA

The Cash Value Added method was developed in 1996 by Swedish financial advisers E. Ottoson and F. Weissenrieder. This approach is the difference between the company's net cash flow and costs equal to the cost of foreign capital. This indicator can be considered an analogue of Economic Value Added, but it is based on the use of cash flow from operating profit.

This method allows you to determine four key variables: operating cash flow, cost of capital, investment, and economic life of investment. A positive CVA indicates that the company is experiencing an increase in value. A negative CVA, on the contrary, indicates that the cash flow is insufficient to cover the amount of cash flow that is required to reimburse strategic investment. The company value is calculated by analogy with the EVA method.

Created Shareholder Value - CSV

This method allows you to evaluate the company value from the perspective of investor expectations. The Created Shareholder Value (CSV) method was proposed by Pablo Fernandez in 2006. This method is based on economic profit,

¹ See also Biddle et. al. (1999) for an overview of the validity of claims on the advantages of EVA.

² See also Lovata and Costigan (2002) for an empirical analysis of what firms are more likely to adopt the EVA framework.

because the main criterion for evaluating the result is the rate of return required for investment risk. However, this method allows you to compare the results with the market capitalization of the company's equity.

The calculation of CSV is conducted in two stages:

- 1) Calculation of the Shareholder Value Added (SVA). SVA shows the relationship between investor expectations and the company's stock market rate.
- 2) Calculation of the indicator of total Shareholder Return (SR). This indicator takes into account all the incomes from the company to shareholders.

Thus, as a result, the total Shareholder Return is compared with the cost of equity. Accordingly, the creation of company value occurs only if the Shareholder Return is greater than the cost of equity. The company value is calculated by analogy with the EVA method.

Created Shareholder Value can be related to Economic Value Added. For example, El Mir and Seboui (2008) have shown that governance characteristics are important in explaining the differences between the results provided by CSV and EVA and that board independence, the auditors' expertise and reputation, the ownership structure and the stock-options contribute significantly in explaining these differences.

Cash Flow Return on Investment - CFROI

Cash Flow Return on Investment allows you to determine the rate of value creation, regardless of the size of the company and industry. This indicator is based on the internal rate of return. The CFROI method uses a life-cycle approach to evaluate the discount rate, and therefore includes the company's competitive position and prospects for future investment. The advantage of this method is that it allows you to determine the future value of the business, since it reflects the value of money over time, takes into account the impact of inflation, eliminates distortions in financial statements, and thereby maintains the comparability of companies. The disadvantage of this method can be considered a complex calculation, as well as a high probability of large fluctuations between the projected and real cash flows (Hyránek E. et al, 2016).

Cash Flow Return on Investment is the internal rate of return on the investment, expressed as a percentage of the gross cash flow for the analysed period, net of depreciation and total gross investment for the same period. (Baltes and Vasiu, 2016). The Cash Flow Return on Investment method developed by Holt Associates is used in financial strategic consulting. Two distinctive features of this method can be distinguished:

- 1) It allows you to evaluate the activities of the company by cash flows, and not on the basis of indicators of accrued profits;
- 2) It takes into account the investment nature of cash flows, as well as the discounting process.

The method is based on three cash flows of a company:

- 1) GCI - gross cash investment, which reflects the invested capital of the company. It is worth noting that depreciation calculated over the years of operating the assets is included in this cash flow (added to its residual value), and inflation fluctuation is also excluded. A distinctive feature of the method is that the reputation of the company, goodwill, is taken into account in this cash flow.
- 2) OCFAT - operating cash flow after tax, which reflects the results from the implementation of a corporate strategy. It is based on net profit which is subsequently adjusted according to the principles of analysis of the strategic nature of the company's resources.
- 3) TCF - terminal cash flow, which arises from non-depreciable assets. These assets are liquidated after the expiration of the economic life of the invested capital, which is based on a period of smoothing capital returns.

The economic life of invested capital is a method variable that affects the length of receipt of operating cash flows. It depends on the life cycle, size and industry specifics of the company. When moving along the life cycle, the

company's profitability stabilizes, tends to some average value, although different types of companies have different smoothing rates. Companies at the beginning of their life cycles are characterized by growing CFROI, which are gradually stabilizing. Increasing capital and increasing the size of the company enables to reduce the CFROI value. However, the higher the pace of innovation, the easier it is to achieve high CFROIs.

In the future, CFROI values can be used to build predictive estimates of company's cash flows. For this, it is necessary to collect statistical data on the CFROI behaviour (for example, growth or decline) in combination with the expected growth and other parameters throughout the economic life cycle of the company. Further down the line, the DCF method can be applied.

A distinctive feature of this method is that it allows you to evaluate the indicator of economic profit, which reflects the real change in the company value (rather than nominal). In addition, it allows you to evaluate the profitability spread, that is, how much the profitability from implementing the corporate strategy in real terms exceeds (or vice versa) the required risk return.

If a company seeks to increase value, it is necessary to increase the spread. However, excessively strong growth (growth surplus), as empirical observations show, on average leads to a decrease in cash flow returns and, as a result, negatively affects the company value. If the company has a capital base that is growing balanced, and a high CFROI value, then we can talk about the high potential for creating company value.

Real Option Value - ROV

Of particular interest is the Real Option Value method in business valuation, which is one of the least developed methods for valuating property from the group of methods of the income approach to valuing business. Its peculiarity is that it involves accounting for the component in the value of the business, formed by the managerial flexibility of the company, which cannot be correctly taken into account when evaluating the business in the framework of other methods of the income approach.

The value of the business, in accordance with the Real Option Value method, is the sum of two components: the value excluding real options, valued by the classical method of discounted cash flows, and the value of real options of the valuated company (Myers, 1977). Such approaches have been especially well suited to valuation of resource extracting companies (e.g. metal mining, see Savolainen (2016) for a comprehensive literature review).

The Real Option Value method assumes that the asset has the following specific characteristics (Damodaran, A., 2012):

- The value of the asset is the derivative of the value of other assets.
- Cash flows generated by this asset are determined by certain events.

Such assets are called options, while the discounted value of the expected cash flows for such assets underestimates their true value, which is a characteristic feature of many venture and innovative projects, due to the difficulty in prospecting cash flows.

An option is a financial instrument that gives the holder the right to buy (call options) or sell (put options) the underlying asset in a certain amount at a fixed price. For this option right, the option buyer pays a certain price.

Thus, we can say that the option is a transaction that is drawn up by a contract of purchase and sale (delivery) of an asset, including a financial one. In accordance with this contract, the buyer of the option gains the right to demand from the seller the supply (or acquisition) in the future of a certain amount and quality of the agreed underlying asset at the price agreed upon by the parties at the time of the transaction, with payment of a certain amount of money (premiums) for the acquisition of this right.

Regardless of the type of option, its basic mechanism is unchanged and lies in the fact that the owner of the option will execute the contract only if it brings profit¹.

The key features of real options can be distinguished:

1. The real option is associated with the uncertainty of any indicator of the company's activity (the value of the indicator is unknown at the date of valuation);
2. For the existence of the real option, it is necessary to have a managerial decision that is associated with a change in the model of the company's activity, based on information obtained after the resolving of the uncertainty;
3. The existence of the real option is based on the existence of the possibility of obtaining benefits by the company (option on the asset side) or by the counterparty (option on the liability side);
4. The real option is based on the assumption that the management makes the best rational decision from the standpoint of achieving the strategic goals of the company (usually - increasing the value of the business);
5. When the uncertainty that underlies the real option is resolved (this will happen at a certain moment), the information will become objectively true, accessible and sufficient to make an administrative decision on its basis at a certain point in time;
6. Making the managerial decision after resolving the uncertainty is controlled by the management or owner of the company being evaluated.

Thus, the analysis of the nature of real options in evaluating a business allows us to say that every real option is associated with three concepts: uncertainty affecting the company's activities; managerial decision made with a favourable resolution of this uncertainty; and the added value of the business, arising from this management decision.

Leiblein et. al. (2017) argue that real options approach can also be related to the sources of competitive advantage in that competitive advantage may emerge because companies differ in their ability to integrate new information to exercise a contingent claim on an asset in a factor market.

The Real Option Value method refers to the methods of the income approach, since it is associated with determining the additional value of the business, which is based on the likely receipt of income in the future. However, labour consuming nature is one of the reasons for refusing to use this method in value valuating.

Research results

Comparative analysis of business valuation methods

The authors considered various methods for company valuation, both classical approaches and advanced. In business valuation practice, classical approaches are widely used, while the use of advanced methods is only gaining popularity. The authors conducted a comparative analysis of advanced approaches in order to determine which approaches are best used in which cases. The following criteria were chosen as the comparison criteria: calculation basis, advantages, disadvantages and labour input. The comparison results are presented in Table 1 below.

Table 1

Comparison of advanced approaches to company valuation

Criterion	EVA	CVA	CSV	CFROI	ROV
Calculation basis	Adjusted book profit, equity equivalents are also taken into account	Operating cash flow, capital expenditures, investment, economic life of investment	Total return on equity of shareholders, costs of equity	Company cash flows, economic life of assets	Cash flow, cost of debt

¹ Rykova, I.N. Options and types of option strategies in the financial market / I.N. Rykova // *Finance and Credit*. — 2009. — № 40 (376). — pp. 2-14.

Advantages	It allows you to determine the company value, evaluate the efficiency of individual departments of the company; it is an indicator of the quality of management decisions; it serves as a tool to determine the rate of return on capital (ROC), highlighting part of the cash flow earned from investment	Results of the method are independent of accounting policies and accounting standards adopted by the company	It reflects the interests of shareholders; allows you to compare the results with the market capitalization of company's equity	It allows you to determine the future value of the business, since it reflects the value of money over time, takes into account the impact of inflation, eliminates distortions in financial statements, and thereby maintains the comparability of companies	Ability to take into account the rapidly changing economic conditions in which the company operates
Disadvantages	A large number of adjustments; it does not take into account differences in the size of the studied companies; it is based on accounting indicators; it does not reflect the causes of possible problems in the company	The need to use specific adjustments if the expected cash incomes are uneven	The labour consuming method; lack of practical work using this method	Complicated calculation, as well as a high probability of large fluctuations between forecasted and real cash flows	It is not applicable if there is no uncertainty factor; low prevalence of the method and its labour consuming nature; difficulty in determining input parameters
Labour input	Average degree of complexity of the calculation; adjustments complicate the method	Average degree of complexity of the calculation; adjustments complicate the method	High degree of complexity of the calculation; labour consuming	High degree of complexity of the calculation; labour consuming	High degree of complexity of the calculation; labour consuming

Source: Compiled by authors based on the analysis of methods under consideration

As part of the research, the authors analysed the value of a particular company from the pulp and paper industry using classical approaches, as well as advanced methods such as EVA and ROV. Despite the fact that these methods are quite labour consuming, they allow you to get a fairly accurate result, and also use various prerequisites, which make the final comparison of the results quite interesting.

Industry Profile and valuation of JSC Group X using traditional and advanced methods

The pulp and paper industry is one of the strategically important sectors for the development of the economy of any country. In this industry is used expensive and technologically sophisticated equipment, which makes it possible to produce products with a higher added value, in comparison with simple woodworking and furniture production. This industry is fascinating for investors. Several investment projects are being implemented, and new ones are planned in this sector. Also, new products appear; the sales market for the valued enterprise is expanding. Thus, to a greater extent, development is due to product differentiation and mergers and acquisitions (Saksonova and Kantāne, 2016), which suggests that this industry is in the third stage of its life cycle - maturity.

The company produces general-purpose products. First of all, these are various technical and decorative types of paper and cardboard, stationery, sanitary-hygienic and household goods, cellulose. Various types of cellulose is used in almost all industries. Soluble cellulose is used to produce viscose, which is then used in the textile industry. The innovative uses of cellulose are the production of carbon fiber, layered biodegradable plastic, nanocellulose.

Currently, there is a decrease in the production of bleached pulp, primarily in the developed forest states - the USA, Canada, Sweden, Finland and Russia, and an increase in the production of these products in East and Southeast Asia, which confirms the thesis about the change in the centers of production and consumption. We can say that pulp capacities are transported closer to consumers in Asian regions. Despite this, the market of pulp and paper products is growing in the developed forest states; large-scale investments are required for this; these investments are provided by large shareholders. So, for example, in the studied company JSC "Group "X" two large investment projects have been completed: the construction of new and modernization of existing facilities at the plants of the group, the amount of financing was about 2 euros.

In these conditions, the valuation of the company becomes particularly relevant for assessing the dynamics of the company, and for making strategic decisions. Moreover, the use of advanced methods, for example, such as EVA and ROV, allows you to determine the market value of a company by assessing the property complex of the company, i.e. the total capital invested in the company - both equity and borrowed capital (EVA), or as the value of a real option on the exclusive right to further invest in fixed and circulating capital of the company in order to turn its business into a highly profitable (ROV).

JSC Group X was valued using both traditional (income and comparative) and advanced methods (EVA, ROV). Summary results are presented in Table 2.

Table 2

Company valuation results, mln. EUR

Income	2 883,38
Comparative	3 780,57
EVA	3 002,29
ROV	2 514,10

Source: Authors' calculations based on company financial statements and statistical information

As can be seen in Table 2, the valuation of the cost of equity on the basis of different approaches gave generally comparable results. The approach based on the real options method gave a result of about 15% lower than other approaches, with the exception of the comparative one. According to the authors, this is due to the fact that these approaches belong to one group of methods based on cash flow. The comparative approach gave a somewhat overestimated result — about 30% higher than the income approach. It reflects the current market situation. According to the authors, this is due to the fact that many other companies have a slightly different product structure, as well as more innovative types of products (Dunška et. al., 2018) , such as viscose pulp and eucalyptus. However, each of the methods allows you to evaluate the company using different prerequisites, which means that it is advisable to use an integrated approach to fully understand the value of the company, i.e. all of the methods used.

Conclusions, proposals, recommendations

- VBM (Value Based Management) approach. The approach based on measuring the value of the company allows you to take into account the future capabilities of the company. Effective management drives up the company value, which increases investor interest in buying shares in the company. In the foundation of the VBM approach is management based on an integrated financial indicator - the company value.

- The methods used for valuing companies in practice can be divided into classical (traditional, that is, officially used in valuation activities) and advanced approaches, which are used as supplementary approaches in valuating of companies, as well as in making managerial decisions.
- The essence of the traditional income approach to business valuation is to determine the value of the company based on the income that it is able to bring to its owner (s) in the future, including proceeds from the sale of property that is not needed to generate these incomes. The valuation of JSC Group X using this approach resulted in the business value of 2,883.38 mln. EUR. In the process of valuation of the company with the income approach, a financial model of cash flows is created that can serve as the basis for making informed managerial decisions, optimizing costs, analysing the possibilities of increasing project capacities and diversifying the volume of products manufactured. This method will be useful after the valuation as well.
- The traditional comparative approach reflects the market value of the company. It is based on a comparison of the company - the object of valuation with peer companies that are selected according to various criteria, using multipliers. In the framework of this approach, the analysis was conducted on the basis of 29 similar companies to obtain the average market values of multipliers. The valuation JSC Group X using this approach gave the result of a business value of 3,780.57 mln. EUR. This result is comparable to other approaches used in this work, despite the fact that this is the only approach used based on market value.
- The authors valued the company using the advanced approach - the EVA method, which is aimed at evaluating the property complex of the company; in other words, at evaluating the total capital invested in the company (both equity of the company and shareholders, and borrowed capital). The valuation of JSC Group X using this approach gave the result of a business value of 3,002.29 mln. EUR. During the whole forecast and post-forecast periods, EVA was positive, which indicates an increase in market value, and hence the profitability of investments in this company. Using this approach, the authors analysed the structure of the sources of financial resources of the company and the price of the sources. The analysis showed that these factors have a great impact on the EVA indicator. Economic Value Added allows you to determine the type of financing and the amount of capital needed to achieve the required amount of profit.
- When using the Real Option Value (ROV) method, the market value of the company (its equity or 100% of ordinary shares) can be understood as the value of a real option on the exclusive right to further invest in fixed and working capital of the company in order to turn its business into a highly profitable one. This can be achieved, for example, by reconstructing a company with the introduction of new technologies that will allow it to produce better products at relatively low competitive prices. The valuation of JSC Group X using the Real Option Value method gave a result of a business value of 2,514.10 mln. EUR. From the analysis of the Black-Scholes formula, it follows that the price of the real option is higher if: the present value of cash flows is higher; the book value of borrowed capital is lower; there is more time before the expiration of the debt repayment period; the risk is higher (i.e. standard deviation of asset value). Therefore, by analysing these indicators and their ratio, analysts and managers can adjust the management decisions made to achieve the desired result of the company's value. The application of the method is complicated by the fact that it uses many parameters that are evaluative in nature. Also, when applying this method, it may be difficult to obtain reliable source data necessary for the calculation (for example, dispersions).
- The authors performed the sensitivity analysis, which allowed us to assess how stable the result of the valuation of JSC Group X obtained on the basis of the income approach is against changes in key parameters: revenue, discount rate and currency rate. The analysis showed that the discount rate has the greatest impact on the valuation result - if the discount rate is reduced by 10%, the valuation result will increase by 18%.

- In the framework of the research, the authors determined that using different approaches gives different, but comparable results. The authors recommend that company managers use the methods in complex, which will allow managers to more accurately develop the most appropriate ways to maximize the company value in the current conditions, increasing the efficiency of the company.

Bibliography

Agrawal, A., Mohanty, P., Totala, N.K., 2019. Does EVA Beat ROA and ROE in Explaining the Stock Returns in Indian Scenario? An Evidence Using Mixed Effects Panel Data Regression Model. *Management and Labour Studies*, 44(2), 103-134.

Balteş, N. Vasiu, D.E., 2015. Case Study Regarding Financial Performance in Terms of Cash Flow Return on Investment (CFROI) for Companies Listed and Traded on the Bucharest Stock Exchange, During 2006-2013. *Scientific Bulletin*, 20(1), 97-103.

Biddle, G.C., Bowen, R.M., Wallace, J.S., 1999. Evidence on EVA. *Journal of applied corporate finance*, 12(2), 69-79.

Damodaran, A., 2012, Investment Valuation: Tools and Techniques for Determining the Value of Any Asset, 3rd Edition, 120

Dunska, M., Salkovska, J., Batraga A., Braslina L., 2018. Consumer behaviour in innovative products purchasing process. Marketing and Management of Innovations=*Маркетинг і менеджмент інновацій*, 3, 276-289.

DVFA, 2010. KPIs for ESG: Key Performance Indicators for Environmental, Social and Governance Issues-a Guideline for the Integration of ESG into Financial Analysis and Corporate Valuation (Version 3.0). *DVFA-EFFAS: Frankfurt*.

El Mir, A., Seboui, S., 2008. Corporate governance and the relationship between EVA and created shareholder value. Corporate Governance: *The International Journal of Business in Society*, 8(1), 46-58.

Européens, F.D.E.C., 2011. Environmental, social and governance (ESG) indicators in annual reports-an introduction to current frameworks. *FEE, Brussels, Belgium*.

Fiordelisi, F., Molyneux, P., 2010. The determinants of shareholder value in European banking. *Journal of Banking & Finance*, 34(6), 1189-1200.

Firk, S., Schrapp, S., Wolff, M., 2016. Drivers of value creation – the role of value-based management and underlying institutions. *Management Accounting Research*, 33, 42-60.

Firk, S., Schmidt, T., Wolff, M., 2019. Exploring Value Based Management Sophistication: The Role of Potential Economic Benefits and Institutional Influence. *Contemporary Accounting Research*, 36(1), 418-450.

Freeman, R. E., 2010a. Strategic Management: A stakeholder approach, Cambridge University Press.

Freeman, R.E., 2010b. Managing for stakeholders: Trade-offs or value creation. *Journal of Business Ethics*, 96(1), 7-9.

Grayson, D., Amaeshi, K., Jemel, H., Louche, C., Perrini, F., Tencati, A., 2009. Sustainable Value-EABIS Research Project. Corporate Responsibility, Market Valuation and Measuring the Financial and Non-Financial Performance of the Firm.

Hyránek, E., Grell, M., Nagy, L., Londák, J., 2016. Model of Enterprise Financial Performance Measurement in Uncertain Market Environment of Central Europe. *Mediterranean Journal of Social Sciences*, 7(3), 97-109.

Jensen, M.C., 2002. Value maximization, stakeholder theory, and the corporate objective function. *Business Ethics Quarterly*, 12(2), 235-256.

Kim, W.G., 2006. EVA and traditional accounting measures: which metric is a better predictor of market value of hospitality companies? *Journal of Hospitality & Tourism Research*, 30(1), 34-49.

Knauer, T., Silge, L., Sommer, F., 2018. The shareholder value effects of using value-based performance measures: Evidence from acquisitions and divestments. *Management Accounting Research*, 41, 43-61.

Lovata, L.M., Costigan, M.L., 2002. Empirical analysis of adopters of economic value added. *Management Accounting Research*, 13(2), 215-228.

Leiblein, M.J., Chen, J.S., Posen, H.E., 2017. Resource allocation in strategic factor markets: A realistic real options approach to generating competitive advantage. *Journal of Management*, 43(8), 2588-2608.

Lvova, N., Pokrovskaia N., Abramishvili N., Ivanov V., 2016. Developing methodology of monitoring companies' financial stability: abnormal profitability evaluation. Vision 2020: innovation management, development

sustainability, and competitive economic growth, Proceedings of the 28th International Business Information Management Association Conference - Vision 2020, 9-10.11, 2016, Spain, Seville, vols. I – VII, 681 – 688.

Lvova, N., Pokrovskaja N., Voronova N., Ivanov V., 2016. The concept of financial paradoxes: origins, essence, potential for development. Vision 2020: innovation management, development sustainability, and competitive economic growth, Proceedings of the 28th International Business Information Management Association Conference - Vision 2020, 9-10.11, 2016, Spain, Seville, vols. I – VII, 671-680.

Malmi, T., Ikäheimo, S., 2003. Value based management practices—some evidence from the field. *Management Accounting Research*, 14(3), 235-254.

Modigliani, F., Miller M., 1958. The Cost of Capital, Corporation Finance and the Theory of Investment, *American Economic Review*, 48(3), 261-297.

Myers, S. C., 1977. Determinants of Corporate Borrowing, *Journal of Financial Economics*, 5, 147 - 175

Pinto, J.E., Robinson, T.R., Stowe, J.D., 2019. Equity valuation: A survey of professional practice. *Review of Financial Economics*, 37(2), 219-233.

Radionova-Girsa, E., Batraga, A., Salkovska, J., 2019. The determinants of online shopping: building communication with customers in an online dimension. Proceedings: Economic Science for Rural Development 2019, 20th International Scientific Conference, Latvia University of Life Sciences and Technologies, volume 51, 330-337.

Rapp, M.S., Schellong, D., Schmidt, M., Wolff, M., 2011. Considering the shareholder perspective: value-based management systems and stock market performance. *Review of Managerial Science*, 5(2-3), 171-194.

Roche, J., 2008. The Value of Nothing: Mastering Business Valuations, Global Professional Publishing, 307 p,

Ryan Jr, H.E., Trahan, E.A., 2007. Corporate financial control mechanisms and firm performance: The case of value-based management systems. *Journal of Business Finance & Accounting*, 34(1-2), 111-138.

Saksonova, S., Kantāne, I., 2016. Mergers and acquisitions: examples of best practice in Europe and Latvia. *Contemporary Studies in Economic and Financial Analysis*, 98, 95-110.

Saksonova, S., Koļeda, O., 2017. Evaluating the interrelationship between actions of Latvian commercial banks and Latvian economic growth. *Procedia Engineering Journal*, 178, 123-130.

Saksonova, S., Solovjova, I., 2012. Some quantitative aspects of stability management strategy in a bank. *Procedia-Social and Behavioral Sciences Journal*, 58, 569-577.

Savolainen, J., 2016. Real options in metal mining project valuation: Review of literature, *Resources Policy*, 50, 49-65.

Stern, J.M., Stewart III, G.B., Chew, D.H., 1995. The EVA® financial management system. *Journal of Applied Corporate Finance*, 8(2), 32-46.

UNCTAD, 2008, Guidance on corporate responsibility indicators in annual reports, United Nations Publication.