



4th World Conference on Business, Economics and Management, WCBEM

Modification of EVA in Value Based Management

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Abstract

This article deals with the value based management and the metrics used in it. Nowadays, one of the basic requirements on the company is creation of value for the shareholders and that is why managers have adopted value-oriented methods to be able to measure any change of value. In the past, managers of many companies were focused on the main economic objective which they considered to be the maximization of profits. But this attitude was not sufficient to satisfy the requirements of shareholders, because their preferences lie in the value of the company. There will be described the most common value-oriented indicator, economic value added (EVA), in the article. The developer of the EVA concept is Stern Stewart & Company. They criticized the traditional indicators as ROA, ROI, PAT, EPS etc. for their characteristic and the weak explanatory power in terms of value creation. Company valuation through EVA is an appropriate mean to determine creditworthiness of a company. The EVA calculation also provides valuable information for various areas of management. This metric is quantifying the value that was added as a result of the implementation of operational activities during the reference period. Moreover, there are many modifications of the EVA used in practice, such as MVA, CVA, SVA, RONA that will be described and compared in the article.

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Peer-review under responsibility of Academic World Research and Education Center

Keywords: Economic Value Added; value of the company; shareholders; stakeholders;

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1. Introduction

In the past, managers of the enterprises were focused on basic economic objective for which they considered profits maximization. However, Lehutova said (2013) that at present value of profits gets less attention and the maximizing of the market value began to emerge as the top target in the enterprise, because it captures not only the level of income, but also time factor and risk. Profit indicators are still used as the background of the enterprises performance calculations, but economists draw attention to the efforts of realistic expression of the economic benefit of enterprise and the success.

The first conceptual ideas of value-oriented approach to business management were necessitated by changes in the economic environment; it began to appear in the US in the eighties of the 20th century. Fruhan (1979) and A. Rappaport (1986) are considered to be authors of the theory. According to this theory and to Kotulic (2007), the main task of management is to provide increasing value to the owners, allowing the creation of the compensation system according to the degree of the objectives fulfillment. The theory of value-oriented management, also known as Value Based Management (VBM) is the interest of many consulting companies worldwide.

2. Concept of value

The terminology in VBM might be tricky, because the term value can have more interpretations. It is necessary to distinguish this category in practice, as it entails a number of concepts. On the one hand, we recognize so-called Book Value (BV), the value of the items in accounting, based on the traditional financial accounting statements. Under the market value can be understood the value determined under a commercial agreement between a willing seller and impartial buyer on the open market.

Alternative value methods of financial analysis have become frequently discussed issue in practice. Those are dealing with the concept of added value (Value Added, VA). Under the added value is generally understood certain quantified difference. Based on the concept of added value, there is another expression (mostly common discussed in expert literature) the Economic Value Added (EVA). This indicator puts the accent on capturing economic gain and the process of creating added value, which is not reflected in the financial statements. The issue of EVA is often (almost always) explained with the so-called MVA (Market Value Added), which enables to understand both of these categories and relations between them easier and faster. MVA is the present value of all EVA that will be achieved in the future, while pursuing at the enterprise-level (Moyer, 2007). EVA, unlike MVA, is calculated at lower level – partially in the enterprise, for example in each division separately.

2.1. Comparison of value management approaches

Under the theory of value management it is possible to determine two values:

- shareholder value - shareholders are owners of the company, particularly interested in the growth of the capital value, which they invested in the company.
- stakeholder value - extends to a wider range of subjects.

Both approaches belong to the theory of value management, and their common feature is supporting efforts to maximize value. Also, both relate to long-term time horizon and management must be permanently focused on the value orientation. Despite this common objective, these approaches are significantly different, especially from the perspective of the entity to which the value applies.

While the application of value management in the stakeholder approach, it is necessary to meet the input assumption that the enterprise satisfies the requirements of stakeholders by its activities. Despite the fact that all stakeholder parties want the long-term prosperity of the enterprise, often happens that their interests differ from each other, their values and particular goals as well.

Shareholder concept is associated with the capital investment, ownership and opportunity costs. Value-oriented management attempts to quantify the value of the company, as well as evaluating corporate performance using so-called value indicators. The foundation of those lies in shareholder access – in shareholder value, which is the

value from the perspective of the owners (shareholders) of the company. Conversely, the stakeholder approach can be described as intrinsically linked set of relationships that are optimized in the company.

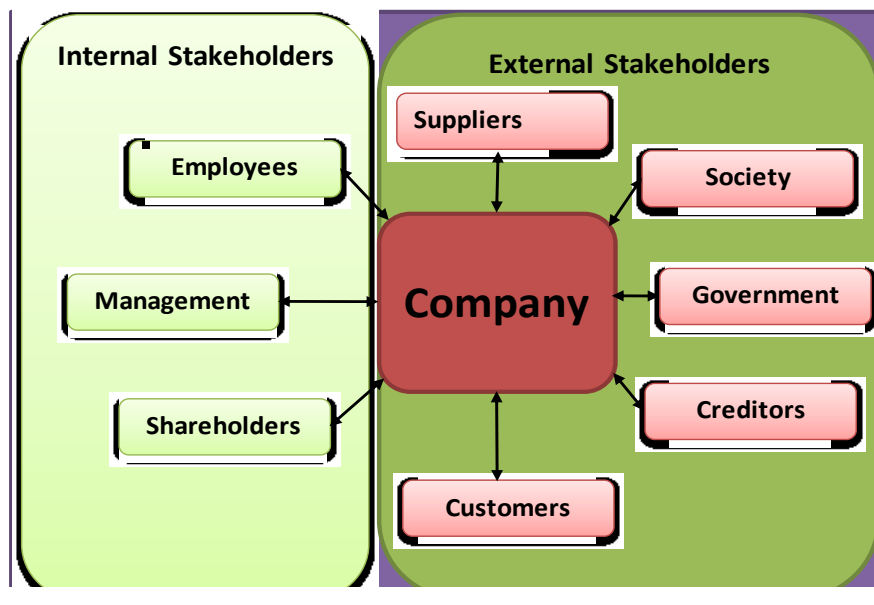


Fig. 1 – Stakeholders overview

Interests of the above groups are not generally compatible, but all of them have to be harmonized in order to achieve successful operation in a company for a long time period.

3. Value indicators

All value indicators calculations respect the neoclassical theory of the behavior of market subjects (The theory of rational expectations ...) from microeconomics, suggesting the basic premise that the purpose of company is to maximize profits. It is not a profit recognized in the accounts, but the category of economic profit. Accounting profit is calculated as the difference between revenues and accounting costs. Economic profit is determined as the difference between the revenues and the so-called economic costs:

$$\text{Economic profit} = \text{revenue} - \text{economic costs} \quad (1)$$

$$\text{economic costs} = \text{explicit costs} + \text{implicit costs} \quad (2)$$

Under the term explicit costs can be understood the costs captured in the accounts. In the value indicators should be taken into account implicit costs as well. They represent the opportunity cost, which are just fictive items from the accounting point of view. This is the sacrificed income related to the alternative possibilities of using resources. The enterprise gave this opportunity up in benefit of another investment. The opportunity cost quantification is a complex process in which it is possible to consider the accounting reports to be the basic information source.

3.1. Basic value indicator – EVA

The basic indicator of value management is an indicator of Economic Value Added (EVA). The authors of EVA concept, which is based on the principle of economic profit, are two Americans from Stern Stewart & Co., Joel M. Stern and G. Bennett Stewart III. Both of them maintain that the money as such are linked to two elements: risk and

benefit analysis. They also believe that these elements should be included in the financial statements as a balancing item. The concept of economic profit appeared a long time ago, around 1890 (Marshall). The first person who used the term EVA in publication was Finegan in 1989, after him it was Walter in 1992, but the attention of the wider economic public EVA received after the publication of related article in Fortune magazine in 1993 (Tully) when it started to be used as a metric of business performance. Consequently, this issue handled a number of experts (Rutledge, 1993; Walbert, 1993 and 1994; Birchard, 1994; Bross and Balkcom, 1994; Byrne, 1994; McConville 1994; White, 1994; Stewart, 1995; Damodaran 2006; Young, 2001; Zalai, 2007; Kislingerova, 2001; Vlcek, 2002; Dluhosova, 2006; Marikova and Marik, 2001; Neumaierova and Neumaier, 2002; Reznakova, 2005; and others.)

EVA concept was created for the purpose of making the value objective in the form of private benefits of Shareholder Value. EVA is primarily currently known as a common measure of the company performance but it can be used in other ways:

- as financial analysis tool,
- as a tool of management and employee incentives,
- as a tool of evaluating the company.

Business valuation through EVA is an appropriate mean for determining credibility of the enterprise while EVA is also providing valuable information for various areas of management. This metric is quantifying the value that was added as a result of the implementation of operational activities during the reference period. Moreover, there are numbers of modifications of the EVA used in practice, such as MVA, CVA, SVA, RONA.

Indicator of economic value added can be calculated in two basic ways in financial analysis, but both of them work in theory on the same principle - net profit from operating activities is reduced by the cost of capital:

1. The first one is with using cost of capital, called “Capital Charge”

$$EVA = NOPAT - Capital * WACC \quad (3)$$

where

NOPAT = net operating profit after taxes
 Capital = capital tied in assets that serve operational activities, i.e. all the assets necessary to the main operation. Practical calculation often includes an alternative of this capital in the form of NOA (net operating assets)

$$EVA = NOPAT - NOA * WACC \quad (4)$$

WACC = weighted average cost of capital

Financial indicator EVA characterizes the production capacity of the company minus the cost of capital invested by shareholders and creditors of the company.

2. The second one is with using “Value Spread”

$$Value\ Spread = \frac{EVA}{NOA} \quad (5)$$

where

$$EVA = NOPAT - NOA * WACC \quad (6)$$

then

$$EVA = \left(\frac{NOPAT}{NOA} - WACC \right) * NOA \quad (7)$$

The main reason for using a second expression of EVA the creation of new indicators in here:

- Operating profitability (NOPAT / NOA) – it is a profitability of net operating assets,
- Value spread – as the deference between operational profitability and cost of capital (it is possible to say that this is an expression of the economic value added in percentage).

Professor Marik specifies the problem in the context of the EVA indicator in his publication - the indicator is the absolute one, which means that the results achieved largely reflects the size of the enterprise. This disadvantage, however, might be eliminated by the use of the value spread, which is an important variable for measuring performance of capital. The value spread allows mutual comparison of enterprises despite their different sizes, amount of capital, risk and capital structure (Kollar, 2014). It is contained in the following text as an indicator RONA.

Another problem with EVA is to obtain all the information necessary for the calculation. The calculation of EVA at first glance seems simple, but finding the input data is often difficult.

3.2. Market Value Added (MVA)

As mentioned earlier, issue of EVA is often (almost always) explained with MVA (Market Value Added). MVA is the present value of all the EVA values that will be achieved in the future; MVA is watched on the enterprise-level senior management [7]. EVA, unlike MVA, is calculated with regard to smaller parts of the enterprise, for example for each division. Market value added measures the difference between the market value and capital that has been invested in the company.

$$MVA = \text{company's market value} - \text{invested capital} \quad (8)$$

The objective is to maximize the value of MVA. MVA greater than zero means that the costs capital covers the return on capital invested. This variable has good explanatory power in valuation of the enterprise as a whole.

3.3. Return on Net Assets (RONA)

Indicator RONA is a return of the net assets of the company. Its use in valuing a company is not too important, but it can not be overlooked, as it belongs to the value pointers as one possible modification of EVA indicator. RONA is based on financial ratio analysis of outputs and resources spent to obtain the output. It is also called spread, which was mentioned above as part of the expression of EVA. Its main advantage is its percentage expression.

$$RONA = \frac{NOPAT}{NOA} \quad (9)$$

3.4. Cash Value Added (CVA)

Cash value added, or the CVA is frequently used modification of EVA in the form of value variables. It is based on the assessment of cash flows, instead of profits. The author of CVA is a consulting firm Boston Consulting Group.

$$CVA = (CFROI - WACC) * BIB \quad (10)$$

CFROI = return on invested capital

BIB = gross investment base

CVA tells us how much cash the company creates through its operations. This model divides investments to the strategic ones (they create value for owners and are reflected in the assets) and non-strategic (they also create value but they are captured at costs).

3.5. Shareholder Value Added (SVA)

This is the added value to the owners - the shareholders of the company. It is calculated on a specific date, as the difference between the value of the company to the shareholders at the end and beginning of the period. This quantity characterizes the performance of the company in terms of shareholders with the traditional metrics.

$$SVA_t = SV_t - SV_{t-1} \quad (11)$$

SVA_t = added shareholder value of the company at time t

SV_t = shareholder value of the firm at time t

SV_{t-1} = the shareholder value of the firm at time t – 1

3.6. Total Shareholder Return (TSR)

Total return to shareholders reflects the return to the owners, while its calculation is based on the sum of changes in the value of shares and dividends.

$$TSR = \text{Change in Stock Price} + \text{Dividends Paid} \quad (12)$$

There is not only one way of total shareholder return calculation, but it always means the same thing: the total amount returned to investors.

3.7. Excess Return (ER)

ER value is based on market value. Emphasis is on the requirements of the company's owners, which is capital appreciation.

$$ER_t = \text{true value of wealth at time } t - \text{expected value of wealth at time } t \quad (13)$$

Under the actual value of wealth at time t can be understood the value of the future benefits for shareholders and the expected value of wealth at time t is the final value of the capital invested in the company (respecting of the owners of the required rate of return).

3.8. Comparison of values of indicators used as a method of business valuation

The complexity of the calculations largely reflects the fact that the structures of most indicators, as well as individual adjustment of input variables, are the know-how of the consultancy firms. When applying the existing methods for measuring and assessing the internal performance of the company, the starting point is dividing of the company into different parts (e.g. Division), for which the value will be watched. It is a process of decentralization which enables convenient and accurate performance measurement for the company as the whole, as well as for lower organizational units, using all the indicators compared below. This comparison is based on the related literature by Knapkova and Pavelkova (2005).

Table 1. Overview of the main indicators of value.

Unit of measure	€	€	%	€	%	€	€
Rate of opportunity costs consideration	✓	*	no	✓	*	✓	✓
The degree of reflection of the cost of borrowed capital	✓	*	no	✓	*	✓	✓
Measurability on lower level of management	✓	no	✓	✓	no	no	✓
Usability as a method of business valuation	⊕ ⊕	⊕ ⊕ ⊕	⊕	⊕ ⊕	⊕ ⊕ ⊕	⊕ ⊕ ⊕	⊕ ⊕ ⊕
Usability in the development of reward systems	⊕ ⊕ ⊕	⊕	⊕	⊕ ⊕	⊕	⊕	⊕
The ease of application in management	⊕ ⊕ ⊕	0	⊕ ⊕ ⊕	⊕ ⊕ ⊕	0	0	⊕ ⊕
The simplicity of calculation	4	1	2	3	4	4	4

Source: Authors according to Knapkova, a Pavelkova,: Vykonnost podniku z pohledu financniho manazera

Explanation:

- ⊕ low possibility of using
- ⊕ ⊕ mean the possibility of using
- ⊕ ⊕ ⊕ high possibility to use
- 0 no use

1 – simple; 2 - need simple adjustments; 3 - moderately demanding; 4 – higher degree of difficulty

* Cost of capital are reflected in the discount rate when converting future values , and thus are not explicitly stated

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well as for lower organizational units.

4. Conclusion

At present, the value orientation in the enterprise gets more and more attention not only from valuation specialists, but also from the business managers. Managers must seek to meet the needs of the company's customers with the owners' needs. They have a specific position in the company and they require the rate of return because of the risk (Buc, 2013). The existence of any enterprise should be based on the creation of wealth, which is necessary to monitor and measure by the relevant indicators of value. Although their exact formulas are the secret of the consulting groups, are often used in practice and calculated in many enterprises. It is essential to choose the correct indicator, which will be monitored and control in the company in order to satisfy all stakeholders, including shareholders.

Acknowledgements

This paper is prepared with the support of the project "Education quality and human resources development as the pillars of a knowledge society at the Faculty PEDAS, University of Zilina in Zilina", ITMS project code 26110230083, University of Zilina. Modern knowledge society education / Project is co-financed by the EC funds. (Prispevok vznikol v nadvaznosti na rieseny projekt spolufinancovany zo zdrojov EU s nazvom „Kvalita vzdelavania a rozvoj ludskych zdrojov ako piliere vedomostnej spolocnosti na Fakulte PEDAS Zilinskej univerzity v Ziline“, ITMS kod projektu 26110230083“, rieseneho na Zilinskej univerzite v Ziline. Moderne vzdelavanie pre vedomostnu spolocnost/Projekt je spolufinancovany zo zdrojov EU)

References

- Buc, D., Klietnik, T., (2013). Aspects of statistics in terms of financial modelling and risk, *Proceeding of the 7th International Days of Statistics and Economics*, Prague, 215-224.
- Cisko, S., Klietnik, T., (2013). *Financny manazment podniku II*, Zilina: EDIS Publishers, University of Zilina, pp. 775.
- Kollar, B., Klietnik, T., (2014). Simulation approach in credit risk models, *4th International Conference on Applied Social Science (ICASS 2014)*, Information Engineering Research Institute, *Advances in Education Research*, Vol. 51, 150-155.
- Kotulic, R., Kiraly, P., Rajcaniova, M. (2007). *Financna analyza podniku*. 1. vyd. Bratislava: Iura Edition.
- Lehutova, K., Krizanova, A., Klietnik, T., (2013). Quantification of Equity and Debt Capital Costs in the Specific Conditions of Transport Enterprises. *17th International Conference on Transport Means, Kaunas Lithuania 2013, TRANSPORT MEANS 2013*, 258-261.
- Marik, M. et al. (2011). *Metody ocenovani podniku*. Praha: 3. vyd., Ekopress.
- Pavelkova, D., Knapkova, A. (2005). *Vykonnost podniku z pohledu financniho manazera*. Praha: Linde nakladatelstvi s.r.o.
- Toth, M. (2012). *Financial management*. Nitra: Slovak University of Agriculture in Nitra.