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Utilization of EVA in Inter-Company Comparison Process

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Abstract. Measuring corporate performance still plays significant role in the financial management. Companies try to compare their financial results with other entrepreneurial entities from their relevant markets. For this purpose, they use many indicators, which are able to serve as a useful tool for inter-company comparison. Economic value added (EVA) concept can be also applied during this comparison process. Its enormous benefit is based on the fact, that it takes into account not only costs of debt capital but also the equity one. The aim of this paper is to present best-known theoretical approaches in the field of relative EVA indicator construction and to review the possibilities of their application in the Slovak Republic. It focuses mainly on EVA Momentum and describes the advantages and disadvantages of its use in practice. Considerable space is devoted to the other possible relative indicators based on EVA – EVA ROS, Value spread, Relative EVA according to LBS. The paper also presents indicator named EVA ZERO. Its construction is similar to traditional profitability indicator ROE (Return on Equity). The major differences between these two ratios are described. EVA ZERO eliminates disadvantages of other relative EVA indicators, which are usually caused by difficult determination of cost of equity. Therefore, it has great potential for use in inter-company comparison. Although the research is focused mainly on the entrepreneurial environment in the Slovak Republic, the results might be used in the other countries as well.

Keywords: relative EVA, EVA Momentum, EVA ZERO, corporate performance

1 Introduction

It is very important to measure corporate performance. It is one of the key factors for analysts, because it provides them useful benchmark for inter-company comparison. Various indicators were created in order to judge company's performance. Usually profitability ratios serve as a tool for benchmarking. Many analysts try to use also Economic Value Added (EVA). This indicator appeared in early 1990. It was constructed by Stern Steward and Co.

Although the advantages of EVA are obvious – it takes into account not only costs of debt but also the equity one – there is still one important disadvantage. Calculated values of EVA are in monetary units (i.e. euros, dollars etc.). So the absolute amount of EVA is largely affected by the company size. Large companies have better preconditions to achieve higher EVA than their smaller competitors. It is practically the same problem as using profit for measuring corporate performance.

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In order to overcome this problem, profitability ratios as some kind of relative indicators are used. The solution for EVA is practically the same – it is inevitable to use some relative indicator that is derived from Economic Value Added concept.

2 Methodology

The theoretical framework of the paper was built upon the existing research literature, including scientific state of the art articles, books and magazines. Various approaches in construction of relative EVA indicator were compared. We focused on the strengths and weaknesses of single alternatives. Special attention was devoted to the EVA Momentum and EVA ZERO indicators as one of the newer indicators appeared in this particular area. Key findings are emphasized by using series of examples.

3 Theoretical Framework

The basic formula of the Economic Value Added indicator is expressed as follows:

$$\mathbf{EVA = NOPAT - C \times WACC}$$

NOPAT - net operating profit after taxes
C – long-term capital invested (sometimes defined as equity plus interest-bearing external sources)
WACC – weighted average cost of capital

Or:

$$\mathbf{EVA = NOPAT - cost\ of\ debt - cost\ of\ equity}$$
$$\mathbf{EVA = NOPAT - C_D - Equity \times r_E}$$

C_D – cost of debt – interests after tax shield
r_E – relative cost of equity

Usually, it is quite difficult to get input data. The problem arises especially during cost of equity calculation. It is caused mainly by the fact that it is very difficult to make unbiased estimation of this variable.
In order to create relative EVA indicator, various approaches were presented - Value Spread, Relative EVA according to London Business School, EVA ROS, EVA Momentum and EVA ZERO.

3.1 Value Spread

Value Spread is based on the assumption that the value of EVA should be compared to Net Operating Assets (NOA) resp. Capital invested (C) – based on the fact that NOA equals to C.

$$\frac{}{}$$

NOA – Net Operating Assets (or invested Capital)

This indicator is sometimes presented in the modified form that is derived from original formula and provides the same result.

r – profitability of NOA, i.e. NOPAT/NOA

Values Spread has the potential to give the analyst an idea of what the relative amount of return on invested capital excess the cost of the capital. With the respect to its construction, it is necessary to know the exact value of EVA and NOA. Another problem is that, when compared to businesses that are labor-intensive (e.g. Business services) to those, which are more capital-intensive (e.g. Manufacturing companies), this indicator may reach significantly different values (for service companies achieved NOA generally much lower values – it has a positive effect on the amount of the Value Spread).

Example 1 – Value Spread of manufacturing company and business services company

GAMMA company – manufacturing company - achieved in the reporting period the value of EVA in the amount of 300,000 euros. The amount of invested capital (C = NOA) was 1,000,000 euros. ZETA company that provides business services achieved in the reporting period the same amount of EVA as the GAMMA company. Which company achieved higher Spread Value if the Net Operational Assets of ZETA is amounted to 300,000 euros?

Value Spread of ZETA is at 100%, which means that for 1 euro of invested capital ZETA company was able to create up to 1 euro of economic value added. It is more than three times higher value when compared to GAMMA company. Higher Value Spread was recorded in the company ZETA.

This indicator is therefore suitable only if the companies have the same (or very similar) scope of the business activities. Another disadvantage is that the analysts need to know the exact value of the indicator EVA (calculated under the identical method) and NOA of reporting enterprises. Operating lease also affects the calculation as it decreases NOA (it has similar final effect as on ROA). These assumptions largely complicate the application of this indicator.

3.2 Relative EVA according to London Business School

According to this approach, the relative EVA indicator is quantified as a share of Economic Value Added and the sum of the personnel costs and the total cost of capital:

This relative indicator has a different content than the Value Spread. It shows "what is the proportion of shareholder value on value creation in the company." The question is whether it is possible to set for the value created the sum of personal and capital costs (denominator in the formula). If so, then this comparison of enterprises makes sense.

Example 2 – Relative EVA according to LBS

SIGMA and DELTA companies are very similar. They operate in the same sectors and achieve the same amount of EVA - 400,000 euros. Size of these companies is similar too – they both record NOA in the amount of 7,000,000 euros and have 10% WACC. The only one difference is that SIGMA uses own employees for every activities and records personnel costs in the amount of 100,000 euros. DELTA uses outsourcing, therefore it has less employees and its personnel costs amounts to 20,000 euros. Which company achieved higher Relative EVA according to LBS?

Higher amount of Relative EVA according to LBS was recorded in the company DELTA. Although both companies are equally efficient (the only one difference is linked to the use of outsourcing), they reported different values of relative EVA.

The drawback is that this indicator loses explanatory power when the companies use outsourcing (i.e. especially when comparing companies use outsourcing unequally) and also it is necessary to know the value of EVA (calculated under the identical method).

3.3 EVA ROS

This indicator, as the name suggests, is derived from the well-known return on sales. The value of EVA is compared to the sales:

Main problem of this indicator is, as in the case of ROS, that companies, which achieve high sales at the low margin (i.e. trading companies), are disadvantaged. Especially when compared to the ones from sectors that are characterized by high margins (i.e. services). Therefore, it is necessary to compare only companies that perform business in the same sector. Disadvantage of this indicator arises also in the case when for example manufacturing company decides to increase its profit via single trade transaction – it may endanger its EVA ROS.

Example 3 – EVA ROS

Management of BETA company has the opportunity to carry out one trade transaction – buy goods for 200,000 euros and sell it for 205,000 euros. This transaction does not require to invest any additional capital nor it does not cost anything. Company's sales before the transaction were 1,250,000 euros, EVA was 250,000 euros, while cost of capital were 100,000 (i.e. NOPAT before transaction was 350,000). Income tax is 20%. How will change EVA ROS before and after the transaction?

Carrying out a trade transaction would lead to decrease of EVA ROS from 20% to 17.46%. It causes paradoxical situation – management of BETA company should (in order to achieve higher EVA ROS) refuse the transaction, although the transaction increases the value for shareholders (since EVA increases while the invested capital remains at the same level.

3.4 EVA Momentum

EVA Momentum was created by one of the authors of Economic Value Added concept – B. Stewart. Its calculation is as follows:

EVA Momentum is defined as the change in a company's economic profit in one period divided by its sales in the prior period. It is the size-adjusted change in economic profit, and it qualifies as the missing link in business management (Stewart 2009, 75). It is interesting concept, but it has also some disadvantages, which are necessary to know. Firstly, it still operates with EVA. That means it is necessary to transform accounting profit into operating profit (in order to calculate NOPAT). Influence

of subjective factor plays essential role by this transformation. And also there is problem with determining the cost of equity capital (it is the same problem as in Value Spread, Relative EVA according to LBS and EVA ROS as well). Secondly, time value factor is the next disadvantage of EVA Momentum, because the formula compares values from two different periods. Some corrections could be done to harmonize the periods but the additional calculation is necessary. And finally, there is a problem with inter-company comparison that is mainly connected to the reporting same results when positive EVA is increasing while negative EVA is decreasing.

Example 4 – EVA Momentum 1

There are two companies:

	Company PEGAS	***Company TITAN***
Sales 2015 (EUR)	*500,000*	*500,000*
EVA 2015	*-70,000*	*80,000*
EVA 2016	*-60,000*	*90,000*

*The EVA Momentum for the **Company PEGAS** will be:*

*The EVA Momentum for the **Company TITAN** will be:*

The results are totally the same, but it does not mean that the performance of both companies was the same as well. While the PEGAS company is decreasing its negative EVA, TITAN company is increasing its positive EVA. It can be assumed that there also exists some top value of the EVA that could be achieved by the TITAN company. Then the EVA Momentum will converge to 0. While the PEGAS company could still reach negative EVA but during the year it will decrease, EVA Momentum would valuate better the PEGAS Company than TITAN Company. So for that reason it is better not to use EVA Momentum for inter-company comparison.

Example 5 – EVA Momentum 2

The development of PEGAS and TITAN company will be as follows:

	Company PEGAS	***Company TITAN***
Sales 2016, 2017, 2018 (EUR)	*500,000*	*500,000*
EVA 2016	*-60,000*	*90,000*
EVA 2017	*-30,000*	*92,000*
EVA 2018	*-10,000*	*94,000*
EVA 2019	*10,000*	*94,000*

*The EVA Momentum for the **PEGAS company and TITAN company** during 2017 – 2019 will be:*

	2017	***2018***	***2019***
EVA Momentum PEGAS	***6%***	***4%***	***4%***
EVA Momentum TITAN	***0.4%***	***0.4%***	***0%***

PEGAS company:

_____ _____

_____ _____

_____ _____

TITAN company:
The EVA Momentum for the ***Company TITAN*** *will be:*

_____ _____

_____ _____

_____ _____

PEGAS company records higher level of EVA Momentum than TITAN company. However, it does not mean that PEGAS company is more efficient. TITAN company achieves stable and much higher level of EVA.

Examples mentioned above do not mean that EVA Momentum is a bad indicator. It is just not suitable for inter-company comparison. It is able to use it for comparison the results of one company in time. Managers are according to the calculated values able to see whether the performance of company is increasing or decreasing and how effective were the sales transformed into EVA.

3.5 EVA ZERO

The last indicator is called EVA ZERO. It was created by the author of this paper in order to find a way to construct relative EVA indicator that could be used in inter-company comparison process. It is derived from the original EVA formula:

$$\mathbf{EVA = NOPAT - C_D - Equity \times r_E}$$

The most problematic input value in this equation is r_E – cost of equity – since it is very difficult to make unbiased estimation of this variable. Then the other important fact is that the resulting value of EVA may fall into three intervals. If EVA is positive, then the company creates added value. This situation is desirable. On the other hand, if EVA is negative, company destroys shareholders value. Therefore, this situation is not positively evaluated. If EVA achieves zero value, then the company does not create or destroy the value. From this point of view, EVA at zero level is break-even value that determines whether we are able to consider company as successful or unsuccessful.
If EVA is put at zero level in the equation above, the only one unknown value will remain the cost of equity – r_E. Furthermore, this transformation provides remarkable information. Financial analyst is now able to calculate the level of equity cost at zero EVA:

$$\mathbf{EVA\ ZERO} = \frac{\text{-}}{\qquad}$$

NOPAT - net operating profit after taxes
C_D – cost of debt – i.e. interest expense after tax shield
E – equity

EVA ZERO represents cost of equity at zero EVA. Its information value is very good, because if real cost of equity is lower than EVA ZERO, then the company will achieve positive EVA and will create value. On the contrary, if real cost of equity is higher than EVA ZERO, then the company will achieve negative EVA and will destroy the value. In the case that real cost of equity is the same as EVA ZERO, company will achieve zero EVA and will not either "create" or "destroy" the shareholders' value. It eliminates formation of potential deviation in EVA calculation caused by incorrect cost of equity determination. Various analysts should (according to available input data) reach the same value of EVA ZERO. Every shareholder is able according to his preferences and capital appreciation requirements very easily to determine, whether company enhances or reduces his/her capital. Moreover, it is quite simple to compare companies or to compare performance of selected company in the time scale.

If two companies from the same industry with similar quantitative characteristics (i.e. shareholders of these companies do not have relevant reason to require extremely different rate of return) achieve different values of EVA ZERO, better management of equity has the one, whose EVA ZERO is higher.

It is also possible to compare companies from various industries or sizes. Managers are also able to compare their company with surrounding economic subjects or their strategic business units among each other.

Example 6 – EVA ZERO

ALFA company and PONTUS company achieved in the last year these results:

	ALFA company	***PONTUS company***
NOPAT	*4,000,000*	*1,200,000*
Equity (E)	*8,000,000*	*5,000,000*
Debt costs (C_D)	*1,500,000*	*375,000*
Income tax	*20%*	*20%*

Compare both companies according to EVA ZERO.

$$EVA\ ZERO - ALFA = \frac{-}{} = \frac{-}{-}$$

$$EVA\ ZERO - PONTUS = \frac{-}{-}$$

EVA ZERO of ALFA company is 35%. It means that if real cost of equity is below 35%, ALFA company will create economic value added. EVA ZERO of PONTUS company is lower - 18%. PONTUS enhances shareholders' value only if the required rate of return is below 18 %. It is obvious, that ALFA company is more efficient, because it is able to satisfy much higher shareholders' requirements and to achieve positive economic value added at the same time.

EVA ZERO serves as quite convenient indicator for inter-company comparison. It has also some disadvantages. Mainly, it sometimes provides results that are impossible to interpret – for example when company achieves negative NOPAT reduced by cost of debt altogether with negative equity. Also extreme values of EVA ZERO may occur when the value of equity approaches to zero. These disadvantages are very similar to those one, which may occur when using ROE. Also construction of EVA ZERO is similar to ROE with one important difference – EVA ZERO is based on EVA concept

and it takes into account operating results (i.e. NOPAT). While ROE is based on accounting profit, so it is affected by non-operating results.

4 Conclusion

There are several ways how to use EVA for inter-company comparison process. Every approach has some disadvantages, which may cause many complications during comparison. The best results were obtained when using EVA ZERO. It allows to compare companies from various sectors and still it has very good explanatory power. It is similar to ROE, but in addition it is based on operating profit and it takes into account Economic Value Added concept.

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