

Decomposition of EVA Equity to the Sub-operational Plans of a Company

Zuzana Rowland

University of Žilina

Abstract

The world is beginning to recognize the need, accuracy and persuasiveness of measuring business performance. Economists are continuously searching for the appropriate tool with which companies can plan, manage and control their business processes and which takes into account current market expectations and requirements. Economic Value Added (EVA) is one of the most important evaluation indicators. This contribution describes the basic characteristics of this indicator and puts forward several options for the calculation of EVA. The options are based on either the accounting (or operative) approach or the financial (or current value) approach, and specifically concerns the calculations of EVA Equity and EVA Entity. The source of the data for the calculations are the annual reports of a transport company for the years 2003-2009. To fulfil the aim of this article, the calculation of EVA Equity is based on the process identified by Neumaierova and Neumaier, and the decomposition of EVA Equity is determined according to the methodology prescribed by the Ministry of Industry and Trade of the Czech Republic. This contribution seeks to decompose EVA Equity, which is viewed as the strategical goal of a company, into partial indicators that can be incorporated into a company's tactical plan in the form of operative plan indicators.

Keywords: EVA Equity, decomposition, business success, strategic goal, sub-operational plans

Introduction

As societies and economies have developed, more people have begun to realize the importance of the accurate and cogent measurement of business performance.

According to Jarina and Bodorová (2013), the evaluation of a company is one of the most important financial decisions the management of a company can make. Each company aims to maximize its value which leads to growth in shareholder wealth (Majerčíková and Bartošová 2012). It is therefore necessary to find a tool which enables companies to plan, manage and control their business processes. The accuracy of the input data is very important within this context. Dvořáková and Vochozka (2014) point out the need to adapt the tools of measurement according to current market expectations and demands. Existing methods for evaluating the performance of a company do not fully satisfy the increasing demands placed on businesses. They do not allow the evaluation to be made for the long term (Kvach and Il'ina 2013). To properly assess the performance of a company, the concept of profit maximization as the main objective of a company needs to be replaced by the concept of maximizing value (Vochozka and Rowland 2015). At present, Economic Value Added (EVA), which was developed by two Americans – Stewart and Stern – in 1990, is perceived to be an accurate measure of financial performance (Chmelíková 2008).

The aim of this contribution is to calculate EVA Equity for a specific company and to put forward proposals for its decomposition into the operative plans of the business.

Literature review

EVA is one of the most important business performance evaluation indicators. It provides a basis for the analysis of the inputs for the calculation of a business' value, as well as for the inputs for calculating cost of equity (Horváthová, Mokrišová and Suhányiová 2014). Stewart (1991) interpreted EVA as being the residual income that accrues to both a company's debtholders and its equity holders.

In order to establish whether a company has pursued a strategy focused on EVA growth, it is necessary to identify those factors that affect the size of EVA (Bluszcz and Kijewska 2016). According to Aggarwal and Sharma (2011), the key financial factors that determine EVA are the return on investment, return on equity, capital employed, etc. EVA allows managers to evaluate a company's economic value, assess funds and efficiently allocate resources, thereby using adjustment items to reflect the true economic value of the company (Huang and Liu 2010).

The concept of EVA is quite simple; it maximizes the spread between the return on capital used to generate profits and the costs of using that capital (Musa 2008). By adopting the concept of EVA, business executives hope to increase the efficiency with which assets and resources are allocated, thereby increasing shareholder wealth (Chmelíková 2008). Adimando, Butler and Malley (1994) claim that EVA is almost 50% better than its closest accounting-based competitor in explaining changes in shareholder wealth.

Vochozka (2009) claims that EVA describes the ability of a company to generate economic profit (economic profit = accounting profit – cost of equity). In contrast to traditional performance metrics, EVA better reflects the real costs of a company because it includes equity costs (Chmelíková 2008).

According to Abate, Grant and Stewart (2004), there are two ways to define EVA – the accounting (or operational) approach and the financial (or present value) approach. Under the accounting approach, EVA is (known as **EVA Entity**) is described by the following equation:

$$EVA = NOPAT - C * WACC \quad (1)$$

where NOPAT stands for Net Operating Profit After Taxes, C stands for Capital Employed to Generate Operating Profit, and WACC stands for Weighted Average Cost of Capital.

NOPAT can be expressed in simple terms as tax-adjusted EBIT (Abate, Grant and Stewart, 2004, pp. 62):

$$NOPAT = EBIT(1-t) \quad (2)$$

where t stands for income tax rate and EBIT stands for Earnings Before Interest and Taxes.

WACC can be expressed as (Bluszcz, Kijewska and Sojda, 2015):

$$WACC = k_e * \frac{E}{C} + k_d * (1 - t) * \frac{D}{C} \quad (3)$$

where k_e stands for Cost of Equity, E stands for Equity, D stands for Debt, t stands for income tax rate, k_d stands for Cost of Debt and C stands for enterprise value; it is equal to the sum of equity and debt.

EVA can also be expressed in terms of the return on capital after tax and the cost of capital (de Wet and du Toit, 2007):

$$EVA = (ROIC - WACC) * C \quad (4)$$

where ROIC stands for the Return On Invested Capital ($ROIC = NOPLAT/IC \rightarrow NOPLAT$ stands for the net profit (or loss) from the main business minus the tax on the profit), WACC stands for Weighted Average Cost of Capital and C stands for Invested Capital (at the beginning of the year).

EVA can also be determined by subtracting the cost of equity from the earnings (de Wet and du Toit, 2007). Under this method, EVA is often referred to as **EVA Equity**:

$$EVA = Earnings - (k_e * equity) \quad (5)$$

where k_e is the Cost of Equity.

EVA Equity can also be expressed in the form of the following equation:

$$EVA = (ROE - k_e) * equity \quad (6)$$

where ROE stands for the Return on Equity and k_e stands for the Cost of Equity.

The calculation of the k_e indicator (Cost of Equity) is as follows (Stehel and Vochozka, 2016):

$$k_e = \frac{WACC * \frac{D}{A} - \frac{EAT}{EBT} * C * \left(\frac{C}{A} * \frac{E}{A}\right)}{\frac{E}{A}} \quad (7)$$

where A stands for Assets, E stands for Equity, D stands for Debts, EAT stands for Earnings After Taxes and EBT stands for Earnings Before Taxes.

WACC is hereby defined as the sum of interests that reflect certain risks connected with running a business:

$$WACC = r_f + r_{LA} + r_e + r_{FinStab} \quad (8)$$

where r_f stands for the Risk Free rate, r_{LA} stands for the function of the indicators characterizing the size of the enterprise, r_e stands for $r_{entrepreneurial}$ – the function of the indicators characterizing the creation of ROA (Return On Assets) and $r_{FinStab}$ is the function of the indicators characterizing the relationships between the assets and liabilities.

In business practice, there are other ways of calculating the top indicators of business success.

According to Abate, Grant and Stewart (2004) the financial interpretation of EVA is especially appealing to security analysts and portfolio managers. In principle, EVA is directly related to wealth creation via Net Present Value (NPV). In this context, NPV (or MVA, for market value added) can be expressed as the present value of expected future EVA (NPV = MVA = Present Value of Expected EVA).

Sedláček (2007) claims that macroeconomic policy has a substantial impact on the creation of EVA within a company.

Economic Value Added provides a general analysis of business performance. However, the use of EVA Entity, provides a better indicator of business performance for investors i.e. the owners and creditors, whereas EVA Equity is purely relevant to the business owners.

The EVA indicator, due to the way it is constructed, is a base variable for the business performance calculation. The total current value of future EVA is therefore equal to the enterprise value. It can therefore be deduced that a positive development in the indicator can acquire strategic meaning for a company, its owners, or its managers. Company managers observe the interests of the owners. The EVA indicator and its value is therefore the most important strategic aim of a company.

Materials and Methods

The basic data sources for this study were the annual reports (2012) of CSAD Jihotrans, as posted on their website <http://spolecnost.jihotrans.cz/ke-stazeni/> za roky 2003-2009¹.

The information held in the Financial Statements of the annual reports, as well as other facts relevant to the financial analysis, were of significance.

The sources of the data used for the calculation are presented in Table 1.

Table 1: Data sources based on the Financial Statements

Name	Statement	Statement Item
Working Capital	Balance Sheet	(C.I+C.III+C.IV+D.I.2) - (B.III+B.IV.2+B.IV.3+C.I.1)
Total Assets	Asset Balance Sheet	A + B + C + D
Stock	Asset Balance Sheet	C.I.
Receivables	Asset Balance Sheet	C.III.
Short-term Financial Property	Asset Balance Sheet	C.IV.
Current Assets	Asset Balance Sheet	C
Equity	Liability Balance Sheet	A.
Bonds and Bills	Liability Balance Sheet	B.II.6 a B.II.7
Current BC and Financial Aid	Liability Balance Sheet	B.IV.2 a B.IV.3
Long-term BC	Liability Balance Sheet	B.IV.1
Short-term Liabilities	Liability Balance Sheet	B.III
Retained Profit	Liability Balance Sheet	A.III.2+A.IV+A.V
Foreign Capital	Liability Balance Sheet	B
Short-term Foreign Capital	Liability Balance Sheet	B.III + B.IV
Corrupt Sources	Liability Balance Sheet	A + B.IV. + B.II.6 + B.III.9
Profits on Sold Goods	Profit and Loss Sheet	I.
Costs on Sold Goods	Profit and Loss Sheet	A.
Performance	Profit and Loss Sheet	II.
Performance Consumption	Profit and Loss Sheet	B.
Personnel Costs	Profit and Loss Sheet	C.
Depreciation	Profit and Loss Sheet	E.
Interest Costs	Profit and Loss Sheet	N.
Profit per accounting period	Profit and Loss Sheet	***
Total Profit	Profit and Loss Sheet	I. + II. + ... + XIII.
Total Costs	Profit and Loss Sheet	A + B + ... + T
Profit before interest and tax	Profit and Loss Sheet	*** + S+ Q + N
Profit	Profit and Loss Sheet	I. + II.1.

Source: Author

¹ The data for the years 2003 – 2009 were specifically used due to the functioning and availability of the benchmarking model on the webpages of the Ministry of Industry and Trade of the Czech Republic.

For the calculation of EVA Equity, the procedure determined by Neumaierová and Neumaier (2006) was applied. The procedure is presented in Table 2.

Table 2: EVA Equity calculation procedure

Indicator	Calculation
EVA	$(ROE - r_e) * VK$
ROE (Return on Equity)	Economic Result after Taxes / Equity
r_e (alternative costs on capital)	See Rating Model
CZ / Profit	Economic Result after Taxes/Economic Result before Taxes
ROA (Return on Assets)	EBIT / Assets
VK / A	Equity / Assets
UZ / A	Corrupt Sources/ Assets
Interest Rate	Interest Costs / (Bonds + Bank Credit)
Liquidity 3	Current Assets / (Short-term Liabilities + Short-term Bank Credits)
Liquidity 2	(Receivables + Financial Property) / (Short-term Liabilities + Short-term Bank Credits)
Liquidity 1	Financial Property / (Short-term Liabilities + Short-term Bank Credits)
EBIT / V (margin)	EBIT / Total Revenues
V / A (Return on Assets)	Total Revenues / Assets
PH / V	Value Added / Total Revenues
ON / V	Personal Costs / Total Revenues
Depreciation / V	Depreciation / Total Revenues
(Other V - N)	$PH / V - ON / V - \text{Depreciation} / V$
T	Profits

Source: MPO (2006)

On the basis of the above, it was possible to determine the development of EVA Equity in CSAD Jihotrans within the evaluated period.

The EVA indicator for 2009 was subsequently decomposed according to the methodology of the Ministry of Industry and Trade. As a result, the financial indicators, which the business must manage to achieve its strategic aims and excellent results, were identified.

The outputs of the benchmarking model of the Ministry of Industry and Trade were put into tables according to their individual pyramid decompositions so that a comparison could be made to similar businesses in the individual years.

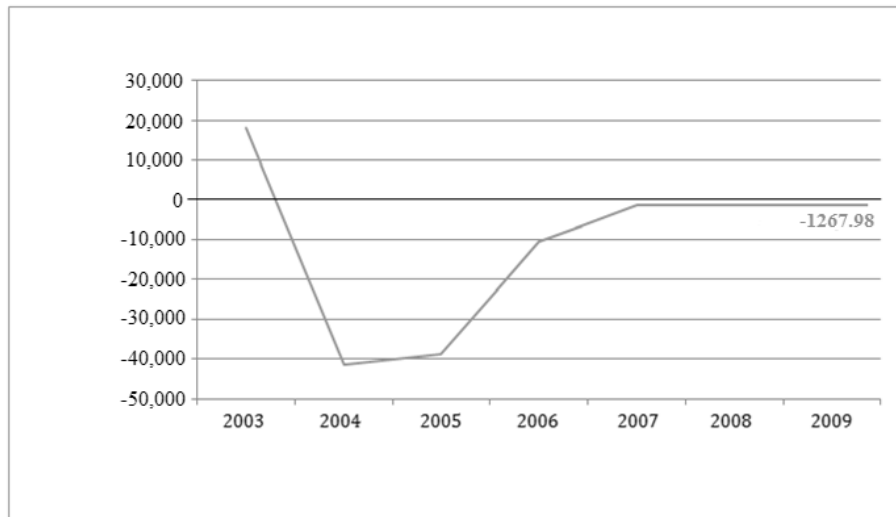
In 2009, the Ministry of Industry and Trade replaced the OKEC classification with the NACE classification. As a consequence of this change, the business is compared, until 2008, to services, and in 2009 to transportation. The reason for this is the fact that the original benchmarking model under the OKEC classification did not include transportation as a separate item.

Results and Discussion

EVA Equity Value

The development of EVA Equity in CSAD Jihotrans is illustrated in Figure 1.

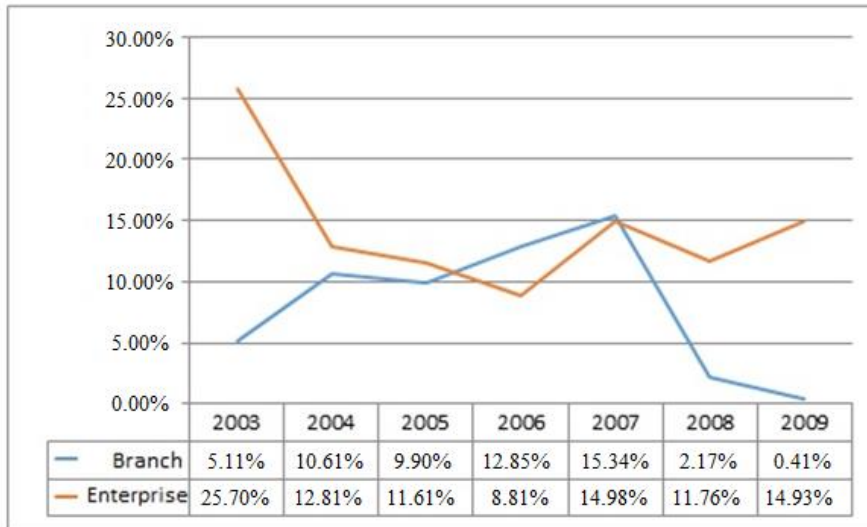
Figure 1: The development of EVA Equity in CSAD Jihotrans – value creation for the owners (in CZK)



Source: MPO (2016), author's calculations

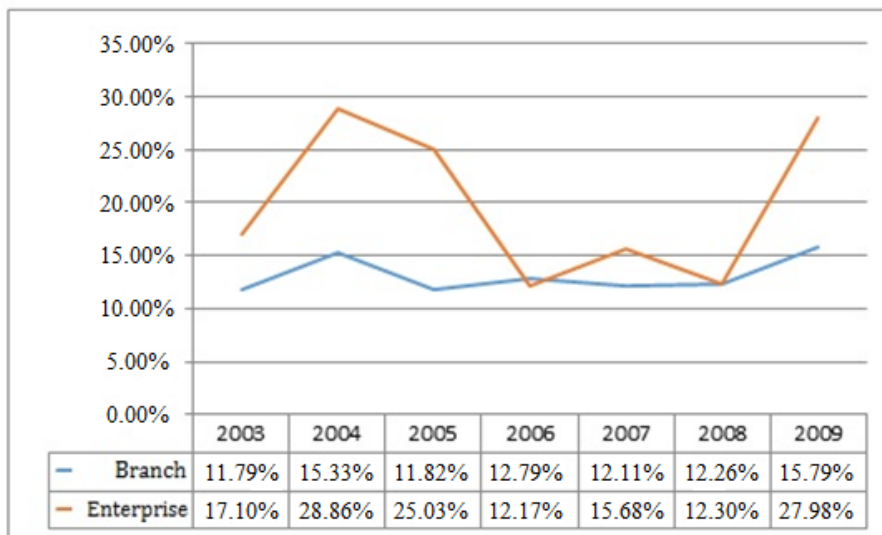
The EVA Equity value was only positive in the first year of the observed period i.e. 2003. In the following years the value of the EVA Equity indicator was negative. The company was therefore not creating value for its owners. In other words, the company owners could have invested their means in an alternative, equally risky investment, and achieved a higher evaluation. It goes without saying, that such a decision must be preceded by an analysis of the company's development. If the company's owner expects long-term negative EVA Equity (regardless of the profit motive), the termination of investments should be considered. This is, of course, subject to the owner behaving rationally and the main motivation for investing being the generation of greater benefits. What is of greater interest in the development of EVA Equity is an analysis of the individual components thereof. The development of Return on Equity is illustrated in Figure 2. The figure compares the development of ROE for the company and the branch in which it operates. It is clear that, with the exception of 2006 and 2007, the company was more successful than the branch as a whole. However, in 2007, the difference between the branch and CSAD Jihotrans was insignificant. Unlike the branch, the company's ROE was positive throughout the whole of the observed period. Moreover, it can be stated that the development of the company's ROE was better than the development of its EVA Equity. When focusing on the economic interpretation of ROE, it can therefore be said that this indicator describes the creation of value for a company's owners. In general, a company's ROE will be compared to other available investments, for which the risks attached to a specific investment must be taken into consideration.

Figure 2: Development of Return on Equity



Source: Annual reports (2012), MPO (2016), author's calculations

Another significant component of the EVA Equity calculation is the value of costs on equity, which corresponds to the amount of risk undertaken. In this case, a much higher value is observed in comparison to the branch (see Figure 3). The company, most probably due to high debt levels, is subject to a higher level of risk, which subsequently influences the economic value added for its owners.

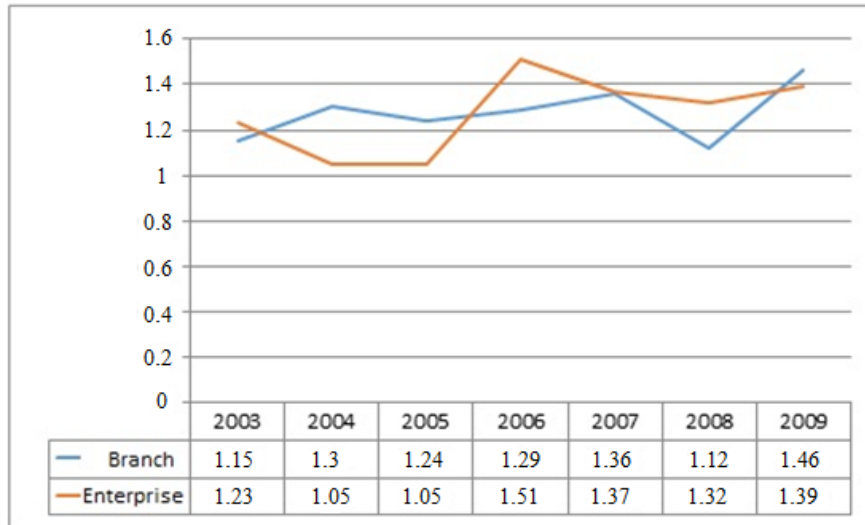
Figure 3: Estimated development of Costs on Equity (k_e)

Source: Annual reports (2012), MPO (2016), author's calculations

Another comparison with the branch was made with regards to liquidity. L3 Liquidity was measured to determine whether the level of risk is or is not higher (in terms of value) as a result of the value of liquidity. Figure 4 clearly demonstrates that this is

indeed not true and that the main factor influencing the high costs on capital is really the financial structure of the given company.

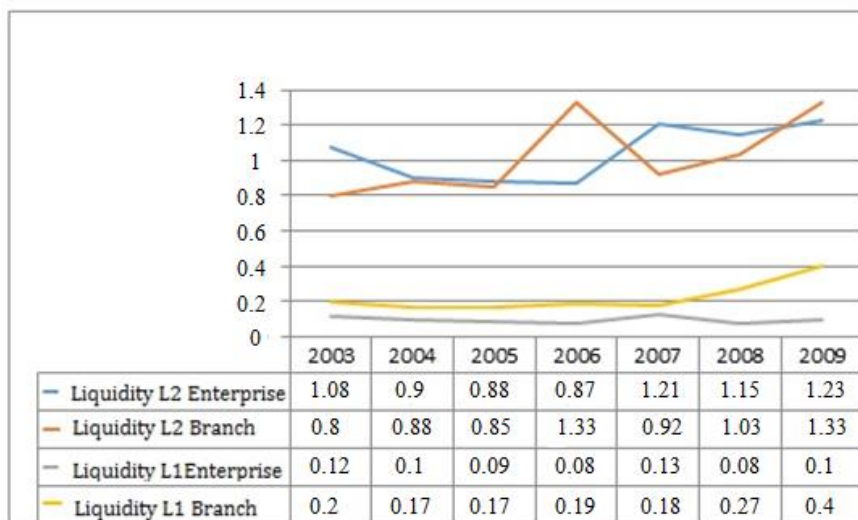
Figure 4: Development of Total Liquidity (L3 in %)



Source: Annual reports (2012), MPO (2016), author's calculations

To complete the picture, a comparison of prompt and immediate liquidity was also conducted, which was not taken into account in the estimation of the costs on equity, but which may suggest in what ways the company works with finances. Figure 5 clearly shows that the L2 liquidity maintained by the company is similar to that within the branch, whereas the L1 liquidity for the company and the branch diverge; the company maintains slightly worse conditions, which may indicate a more efficient use of financial sources.

Figure 5: Development of Immediate and Prompt Liquidity (L1 and L2 in %)



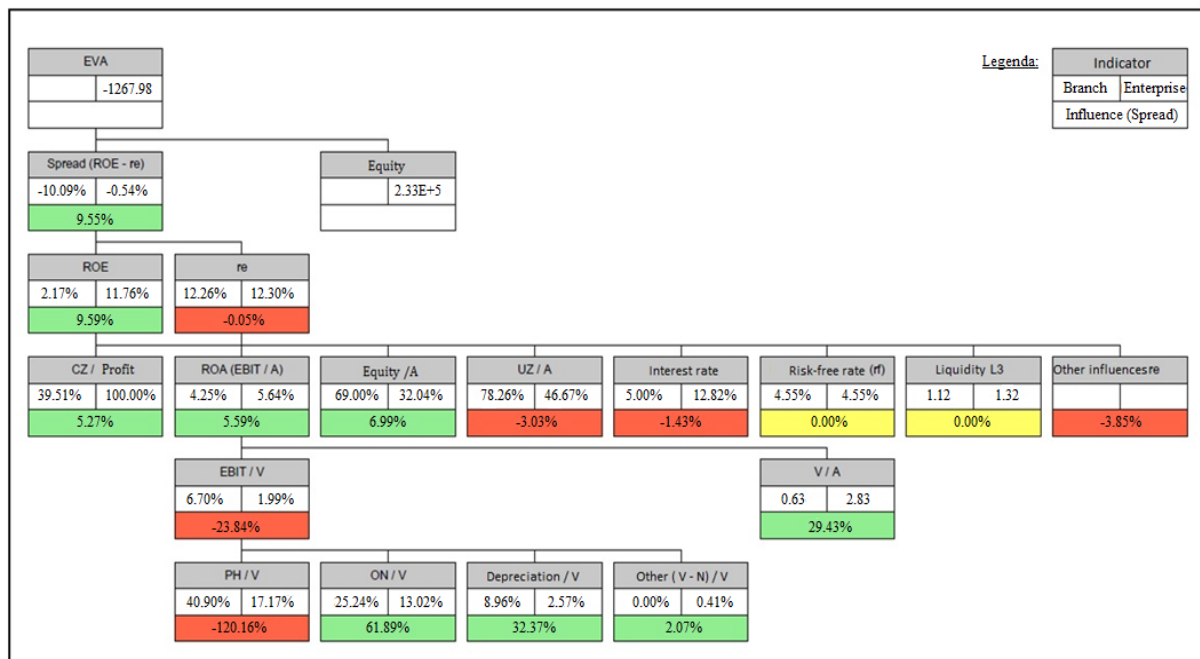
Source: Annual reports (2012), MPO (2016), author's calculations

On the basis of the poor EVA Equity results, we can categorically state that this is influenced by the structure of the company's finances and the ratio between chargeable foreign capital and equity. The volume of foreign capital is too high. There is therefore enormous potential to improve the efficiency with which equity is used and, at the same time, to reduce the volume of incorporated foreign capital.

EVA Equity Decomposition

Figure 6 illustrates the decomposition of EVA for 2009.

Figure 6: Decomposition of EVA Equity in CSAD Jihotrans for 2009



Source: MPO (2009), annual reports (2012)

The variables highlighted in green represent positive values, those in red, negative values.

Figure 7 offers a slightly different view of the decomposition of EVA Equity.

Figure 7: Decomposition of EVA Equity with the option to manage individual indicators.

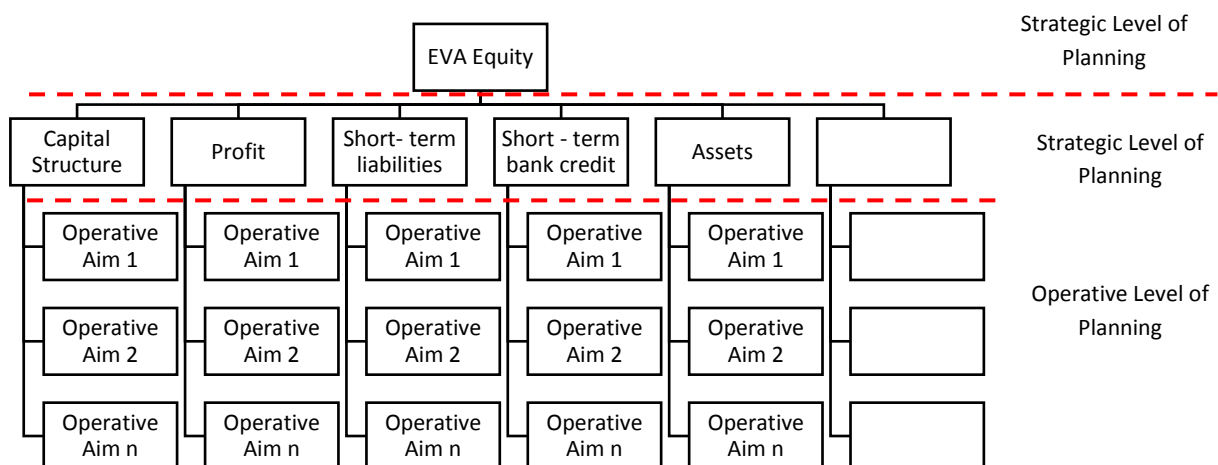


Source: Author

The same variables highlighted in red in Figure 1, which are also referred to in Figure 2, are impossible for the company to control. In contrast, the company can exercise control over the other variables and implement them in its daily plans.

If this interpretation process is continued, the logical conclusion is a specific company plan, respectively a template for creating one. In this case, it is suitable to use and refer to the results of Stehel and Vochozka (2014), specifically the scheme presented in Figure 8 below.

Figure 8: Scheme for Company Plan



Source: Stehel and Vochozka (2014)

The scheme takes the strategic aim, specifically EVA Equity, and divides it into strategic plans for capital structure, profit structure, etc., with planning at the operative level being determined by monthly, weekly or daily results. This structure differs from that put forward by, for example, Kislingerová (2007) and other authors.

Conclusion

The aim of this contribution was to calculate EVA Equity and to suggest its possible decomposition into the operative plans of a specific company.

The aim of the contribution was fulfilled.

The EVA Equity calculation showed that, during the observed period 2003-2009, CSAD Jihotrans only generated positive economic value added in 2003, and only negative values in the following years. On the basis of the analysis undertaken, it can be concluded that the company demonstrated a better ROE than the branch and a similar liquidity to the branch. It was subsequently identified that the negative EVA was the result of excessive costs on capital, which were attributable to the huge volume of chargeable foreign capital.

The second partial aim of this study was the decomposition of EVA Equity according to the methodology of the Ministry of Industry and Trade. As a result, partial values were calculated for the company. This enabled the identification of those variables that the company would and wouldn't be in a position to influence. This concurred with the work of Stehel and Vochozka (2014), whereby EVA Equity is seen as a strategical aim which a company can decompose into partial indicators, which can subsequently be divided into strategical plans and finally into the form of indicators for an operative plan.

References

- ABATE, J. A., J. L. GRANT and G. B. STEWART, 2004. The EVA Style of Investing. *The Journal of Portfolio Management*. **30**(4), 61-72. ISSN 0095-4918.
- ADIMANDO, C., R. BUTLER and S. MALLEY, 1994. Stern Stewart EVA Round Table: FAST AND FANTASY. *Journal of Applied Corporate Finance*. **7**(2), 46-70. ISSN 1078-1196.
- AGGARWAL, V. and R. SHARMA, 2011. Economic Value Added (EVA): Comparative Insights Across Economies. In: *Proceedings of the International Conference on Strategies & Innovations for Sustainable Development in Organization*. New Delhi, India, 498-511.
- ANNUAL REPORTS, 2012. *ČSAD Jihotrans – Ke stažení* [online]. [accessed: 2012-06-25]. Available at: <http://spolecnost.jihotrans.cz/ke-stazeni/>
- BLUSZCZ, A. and A. KIJEWSKA, 2016. Factors Creating Economic Value Added of Mining Company. *Archives of Mining Sciences*. **61**(1), 129-123. ISSN 1689-0469.
- BLUSZCZ, A., A. KIJEWSKA and A. SOJDA, 2015. Economic value added in metallurgy and mining sector in Poland. *Metalurgija*. **54**(2), 437-440. ISSN 0543-5846.

CHMELÍKOVÁ, G., 2008. Economic Value Added versus Traditional Performance Metrics in the Czech Food-Processing Sector. *International Food and Agribusiness Management Review*. **11**(4), 49-65. ISSN 1559-2448.

DE WET, J. - H. and E. DU TOIT, 2007. Return on equity: A popular, but flawed measure of corporate financial performance. *South African Journal of Business Management*. **38**(1), 59-69. ISSN 0378-9098.

DVOŘÁKOVÁ, L. and M. VOCHOZKA, 2014. Possibilities of using method evaluation of companies Harry Pollak in practice. In: *Proceedings of the 12th International Academic Conference*. Prague, Czech Republic, 353-360. ISBN 978-80-87927-04-5.

HORVÁTHOVÁ, J., M. MOKRIŠOVÁ and A. SUHÁNYIOVÁ, 2014. Analysis of Cost of Equity Models in Calculating Economic Value Added of Slovak Businesses. In: *Proceedings of the International Multidisciplinary Scientific Conferences on Social Sciences and Arts*. Albena, Bulgaria, 35-42.

HUANG, D. -T. and Z. -C. LIU, 2010. A study of the relationship between related party transactions and firm value in high technology firms in Taiwan and China. *African Journal of Business Management*. **4**(9), 1924-1931. ISSN 1993-8233.

JARINA, L. and Z. BODOROVÁ, 2013. Performance management and performance evaluation in enterprises. *Ekonomicko-manažerské spektrum*. **7**(1), 54-59. ISSN 1337-0839.

KISLINGEROVÁ, E., 2007. *Manažerské finance*. 2. přepracované a rozšířené vydání. Praha: C. H. Beck. ISBN 978-80-7179-903-0.

KVACH, N. M. and N. A. IL'INA, 2013. Use of the Concept of "Economic Value Added" to Evaluate the Performance of an Organization. *Fibre Chemistry*. **45**(4), 252-257. ISSN 0015-0541.

MAJERČÍKOVÁ, V. and V. BARTOŠOVÁ, 2012. The methodology for determining the value of a company. *Ekonomicko-manažerské spektrum*. **6**(1), 94-99. ISSN 1337-0839.

MPO, 2006. *Finanční analýza průmyslu a stavebnictví 2005* [online]. [accessed: 2016-09-16]. Available at: <http://download.mpo.cz/get/26487/29819/320515/priloha004.pdf>.

MPO, 2009. *Benchmarkingový diagnostický systém finančních indikátorů INFA*: INFA [online]. [accessed: 2016-09-15]. Available at: <http://www.mpo.cz/cz/infa.html>.

MPO, 2016. Ministerstvo průmyslu a obchodu [online]. [accessed: 2016-09-16]. Available at: <http://www.mpo.cz/>.

MUSA, H., 2008. EVA – Economic Value Added and capital structure of company. *Ekonomicko-manažerské spektrum*. **2**(2), 28-31. ISSN 1337-0839.

NEUMAIEROVÁ, I. and I. NEUMAIER, 2006. *Proč se ujal index IN a nikoli pyramidový systém ukazatelů INFA* [online]. [accessed: 2016-09-15]. Available at: <http://www.ekonomikaamanagement.cz/getFile.php?fileKey=CEJVB0NUCAdvCEZIU1VHB0MIUUMEBAVDVFVWQ1VUBAVGQ1VCXgQFBERIREJLYg==&=cz>.

SEDLÁČEK, J., 2007. Analysis of the development of financial efficiency of enterprises in the Czech Republic. *Ekonomický časopis*. **55**(1), 3-18. ISSN 0013-3035.

STEHLE, V. and M. VOCHOZKA, 2014. Company Management by Using INFA Method. In: *Proceedings of the 12th International Academic Conference*. Prague, Czech Republic, 1132-1144. ISBN 978-80-87927-04-5.

STEHLE, V. and M. VOCHOZKA, 2016. Analiza ekonomske dodane vrijednosti u prijevozu. *Naše More*. **63**(3), 185-188. ISSN 0469-6255.

STEWART, G. B., 1991. *The Quest for Value: A Guide for Senior Managers* (1st ed.). United States of America: HarperCollins Publishers. ISBN 0-88730-418-4.

VOCHOZKA, M. and Z. ROWLAND, 2015. The Evaluation and Prediction of the Viability of Construction Enterprises. *Littera Scripta* [online]. **8**(1), 60-75 [accessed: 2016-06-27]. ISSN 1805-9112. Available at: <http://journals.vstecb.cz/the-evaluation-and-prediction-of-the-viability-of-construction-enterprises/>.

VOCHOZKA, M., 2009. Hodnocení finanční situace společností EVRAZ Vítkovice steel a.s. prostřednictvím ukazatele EVA. *AUSPICIA: reviewed journal for issues of social sciences*. **6**(3). ISSN 1214-4967.

Contact address of the author:

Ing. Zuzana Rowland, The Faculty of Operation and Economics of Transport and Communications, University of Žilina, Univerzitná 1, 010 26 Žilina, Slovakia, e-mail: rowland@mail.vstecb.cz

ROWLAND, Z., 2016. Decomposition of EVA Equity to the Sub-operational Plans of a Company. *Littera Scripta* [online]. České Budějovice: The Institute of Technology and Business in České Budějovice, **9**(3), 52-65 [accessed: 2016-12-20]. ISSN 1805-9112. Available at: http://journals.vstecb.cz/category/littera-scripta/9-rocnik/2_2016/.