

MODERN INNOVATIVE APPROACHES OF MEASURING BUSINESS PERFORMANCE

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Abstract:

The measuring business performance of the company is a very important task of company's management. The main objective of this paper is to introduce modern innovative approaches of measuring business performance. The modern approaches, which are mentioned in this paper, include – Economic Value Added, Economic Value Added Momentum and Economic Value Added Margin. These modern approaches are currently the most important new metrics measuring, how company creates value for its owners and contributes to their wealth. The modern approach Economic Value Added has significantly increased from 2010 to 2015. It means, that selected company's Microsoft Corporation management has created a great volume of wealth. Economic Value Added Momentum points out the outstanding performance and Economic Value Added Margin emphasizes the impressive productivity performance of the company. Based on the results of modern approaches of measuring business performance we can say, that Microsoft Corporation is a strong and stable company.

Keywords: modern innovative approaches, business performance, EVA, EVA Momentum, EVA Margin

1. INTRODUCTION

Measuring performance plays a crucial role in every business. It helps an organization to assess how well the business is achieving its desired objectives. Further, it assists managers in taking knowledgeable decision and translating them into action. Moreover, analyzing business performance provide detailed information about company's financial position and value creation to its shareholders and prospective investor.

There are many different ways to measure business performance. According to *Neely (2007)* financial statements analysis has been the traditional mainstay of quantitative approaches to organizational performance measurement. However, new approaches of measuring of business performance are constantly developing. Economic Value Added is a sign of a new emphasis on the financial aspect of performance.

Traditional performance measurement

Traditional methods are represented by the financial statement ratio analysis, where selected ratios including activity, liquidity, solvency, profitability and market valuation ratios. Ratio analysis belongs to the most frequently used and widespread methods of financial statement analysis used to analyze a business financial standing. *Palepu et al. (2000)* describes ratio analysis as a study of various relationships between different items reported in a set of financial statements. According to *Fridson and Alvarez (2002)* ratio analysis involves methods of calculating and interpreting financial ratios to analyze and monitor the firm's performance.

Modern performance measurement – Economic Value Added

The value-based concept of measuring business performance has its theoretical basis in economic profit. The idea of economic profit is based on the existence of opportunity costs that are very well known in the economic theory (*Salaga, Bartosova and Kicova, 2015*). The concept of Economic value Added is based on the notion that a company is only profitable if its operating income covers or exceeds both operating and capital costs (*Bielik and Turčeková, 2013*). The value added is any excess of after-tax operating profit minus all the costs of doing business, including the interest cost of debt and the opportunity cost of equity. *Tóth (2012)* sees Economic Value Added as an estimate of a business's true economic profit for the year as it represents the residual income that remains after the cost of all capital (including equity capital). *Stewart (2013)* sees Economic value added more than just a performance measure. He describes Economic Value Added as a unique technique for improving the planning process, and a framework for valuing decisions, gauging investments, and shaping strategies. *Nufazil (2016)* added, that *claim Economic Value Added as the performance measure that comes closer to measuring the true economic profitability of a company and is directly linked to the shareholders' value.*

2. OBJECTIVE AND METHODOLOGY

The main objective of this paper is to evaluate the business performance in selected company by the new metrics – Economic Value Added (hereinafter referred to as EVA), Economic Value Added Momentum (hereinafter referred to as EVA Momentum) and Economic Value Added Margin (hereinafter referred to as EVA Margin) in the selected period.

The sources of information are company's financial statements, namely balance sheets, income statements, cash flow statements and company's annual reports, that are all free available at company's website.

Selected object of examination is american multinational technology company Microsoft Corporation, operating in more than one hundred countries worldwide. The reason we have chosen this company for this paper is mainly that the company is perfectly suitable for application of modern innovative approaches of measurement of business performance.

2.1. Methodology of calculation

In order to fulfil the objective of this paper, following calculations are required:

- EVA:

$$EVA = NOPAT - (IC \times WACC)$$

(1)

Where:

EVA: Economic Value Added
 NOPAT: Net Operating Profit After Taxes
 IC: Invested Capital
 WACC: Weighted Average Cost of Capital

First step of EVA calculation

However, Net Operating Profit After Taxes (hereinafter referred to as NOPAT) and Invested Capital (hereinafter referred to as IC) calculation require the following adjustments to be done:

Table 1: Adjustments to NOPAT and IC

Adjustments required to calculate NOPAT	Adjustments required to calculate IC
+ increase / decrease to deferred tax expense - increase / decrease in deferred tax assets	- deferred tax assets
+ research and development expenses - research and development amortization expense	+ unamortized research and development from the current and previous years
+ increase / decrease to provisions and bad debts (allowance for doubtful accounts, restructuring and unearned revenue)	+ provisions and bad debts if they are not included in invested capital
+ increase / decrease to LIFO reserve	+ LIFO reserve
+ impairment charges	+ impairment charges
+ capitalized value of the leases x borrowing rate	+ present value of future lease payments discounted at the company's borrowing rate

Source: own elaboration according to *Young and O Byrne (2000)*

Second step of EVA calculation

The next step necessary to quantify EVA is Weighted Average Cost of Capital (hereinafter referred to as WACC) calculation, where the following equation will be used:

$$WACC = \frac{D}{V} k_d (1-T_m) + \frac{E}{V} k_e \quad (2)$$

Where:

D/V: target level of debt to enterprise value using market-based value
 E/V: target level of equity to enterprise value using market – based values
 k_d: cost of debt
 k_e: cost of equity
 T_m: company's marginal income tax rate

The CAPM model is applied in order to estimate cost of equity (k_e), it is calculated by the equation:

$$E (R_i) = r_f + \beta_i [E (R_m) - r_f] \quad (3)$$

Where:

E (R_i): expected return of security i
 r_f: risk-free rate
 β_i: stock's sensitivity to the market
 E (R_m): expected return of the market

Cost of debt (k_d) is quantified by the following relationship:

$$k_d = \text{interest expenses} / \text{bank loans and short term assistance}$$

- *EVA Momentum* (4)

$$\text{EVA Momentum} = \Delta \text{EVA} / \text{prior sales}$$
 (5)

- *EVA Margin*

$$\text{EVA Margin} = \Delta \text{EVA} / \text{sales}$$
 (6)

3. RESULTS

- *EVA*

The first step in the calculation of EVA is the adjustment to NOPAT and IC. Table 2 shows all corrective adjustments to NOPAT made to company's accounting data to remedy accounting distortions by the EVA calculation.

Table 2: Estimation of NOPAT (in millions of dollars)

	2010	2011	2012	2013	2014	2015
NET INCOME	18760	23150	16978	21863	22074	12193
+ increase / decrease to deferred tax expense	-982	222	952	-973	-312	555
- increase / decrease in deferred tax assets	29	-283	432	403	-309	-26
+ research and development expenses	8714	9043	9811	10411	11381	12046
- research and development amortization expense	7918	8410	8949	9397	9872	10538
+ increase / decrease to provisions and bad debts	305	1461	1946	1486	1770	670
+ impairment charges	0	0	6193	0	127	10011
+ operating lease obligation (after tax interest expense)	39	45	48	56	87	96
+ adjusted interest expense, after taxes	98	191	247	278	388	507
- Investment income, after taxes	-774	-870	-887	-515	-858	-963
NOPAT	18271	24550	26773	23613	24476	24551

Source: own elaboration

The base for NOPAT clarification is calculated from the company's net income. As we can see in the Table 2, net income differs significantly from NOPAT. It is caused by the fact, that accounting data focus only on the company's history. They incorrectly mix operating performance and financing decisions, when they should be kept apart. Furthermore, they do not consider benefits from money invested in research and development which is in truth the font of economic growth, customer satisfaction and productivity gains. Research and development is patently a form of capital investment and should be recognized and managed as such, not written as a period loss. Therefore it is added back to NOPAT. The same happens to impairment charges which are reversed, added back to NOPAT and invested capital, as if the charges never occurred.

The estimation of the IC is the part of first step in calculation of EVA. All necessary adjustments are illustrated in the Table 3.

Table 3: Estimation of IC (in millions of dollars)

	2010	2011	2012	2013	2014	2015
short-term debt	1000	0	0	0	2000	4985
current portion of long-term debt	0	0	1231	2999	0	2499
long-term debt	4939	11921	10713	12601	20645	27808
+ present value of future lease payments	1722	1769	1799	2213	3990	4627
stockholder's equity	46175	57083	66363	78944	89784	80083
+ provisions and bad debts	15205	17453	20448	22735	25459	26490
- net deferred income tax assets	1955	1011	142	-77	-781	-1067
+ impairment charges	0	0	6193	0	127	10011
- investments	39037	54027	65878	84062	91601	102984
IC	45116	50887,6	59289,2	55082,4	72269,4	77178

Source: own elaboration

The second step necessary in order to calculate EVA is the quantification of WACC. WACC or weighted average cost of capital is the calculation of a firm's cost of capital in which each category of capital is proportionally weighted. In order to calculate WACC, the individual units of the WACC formula need to be estimated. While the value of total debt is taken from the company's balance sheet, Market value of equity is calculated by multiplying the correspondent shares outstanding with stock price. Next, return on debt is calculated by dividing interest expenses and interest bearing debt. By the quantification of return on equity I have used the CAPM model which is appropriate in estimation of return on equity by the publicly traded companies. The Table 4 illustrates all data used in the calculation.

Table 4: Calculation of return on equity using CAPM model

	2010	2011	2012	2013	2014	2015
Beta	1.04	1.038	0.998	0.998	0.918	0.949
R _f	2.4%	2.6%	2.6%	1.7%	3%	3%
R _m	7.84%	7.59%	7.99%	7.91%	8.26%	7.99%
R _e	8,19%	8,46%	7,90%	7,98%	7,18%	7,56%

Source: own elaboration, used data from www.ycharts.com

In order to estimate R_f, U.S. 10 year treasury constant maturity rate was used. The tax shield equals 35 percent. After having all necessary data, WACC calculation is depicted in the Table 5.

Table 5: Calculation of WACC

	2010	2011	2012	2013	2014	2015
Total debt	5939	11921	11944	15600	22645	35292
Market value of equity	202051	222299	251597	286066	343731	354392
R _d	3,1%	2,5%	3,2%	2,8%	2,9%	2,6%
R _e	8,19%	8,46%	7,90%	7,98%	7,18%	7,56%
Tax	35%	35%	35%	35%	35%	35%
WACC	8,01%	8,11%	7,63%	7,65%	6,85%	7,02%

Source: own elaboration

According to the theory, the smaller the WACC the better as a company pays smaller interest on its financial resources. As we can see in the Table 5, company has achieved the smaller WACC in 2014. All in all, WACC has decreased from 8.01% in 2010 to 7.02% in 2015. It might be the result of implying the higher portion of debt financing due to the lower cost of debt.

After the estimation of WACC, IC and NOPAT - EVA can be calculated. Table 6 shows the EVA results for the company from the year 2010 to 2015.

Table 6: Calculation of EVA (in millions of dollars)

	2010	2011	2012	2013	2014	2015
NOPAT	18271	24550	26773	23613	24476	24551
IC	45116	50887	59289	55082	72269	77178
WACC	8,01%	8,11%	7,63%	7,65%	6,85%	7,02%
EVA	14656	20422	22247	19394	19525	19127

Source: own elaboration

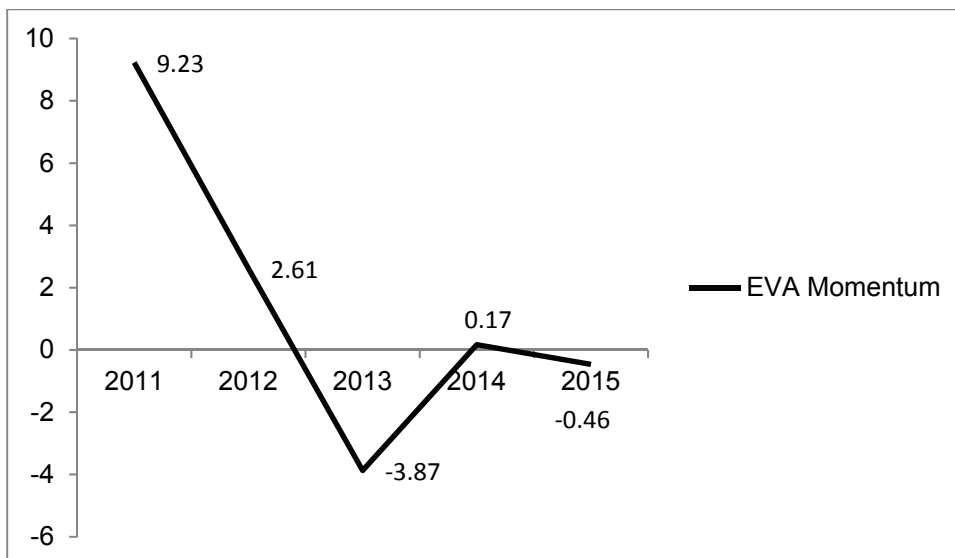
The company's EVA results demonstrated in the Table 6 shows that company is earning a highly positive economic profit after covering all resource costs. The EVA has significantly increased from \$ 14656 million in 2010 to \$ 20422 million in 2011. The greatest volume of EVA was reached in 2012 when company created \$ 22247 million for its shareholders. From 2013 to 2015 the volume of EVA have slightly sunk but was relatively stable. All in all, EVA show a great volume of wealth company created to its shareholders in the selected time period.

- *EVA Momentum*

The first new ratio discussed in this thesis is EVA Momentum (Eva Momentum is the part of new EVA ratio metrics). It is considered to be the most important one. It is basically the change in EVA divided by prior-period sales. In other words, EVA Momentum is the growth rate of EVA. While Table 6 illustrates the profitability and improved performance of the company over time, let's look at EVA Momentum to see how significant the company's performance during the selected period actually was. The Picture 1 displays the graphical development of company's EVA Momentum with the corresponding values in the selected period.

According to Picture 1, EVA Momentum for the year 2011 was 9.23 %, that was the \$ 5766.4 million increase in EVA from 2010 to 2011 over the \$ 62484 million of sales in 2010 was indicated a total performance progress in the company's performance. In 2011, there was 2.61 % growth in EVA Momentum. However, there was a negative value of 3.87 % in 2013 followed by the little improve of 0.17 % in 2014 and slight decline of 0.46% in 2015. All in all, company had an annual EVA Momentum average of 1.54 % in the selected period that is comfortable above the 1 percent to 1.5 percent pace that is considered as optimal. It only confirms very solid if not outstanding performance of company in the selected period.

Picture 1: Development of EVA Momentum



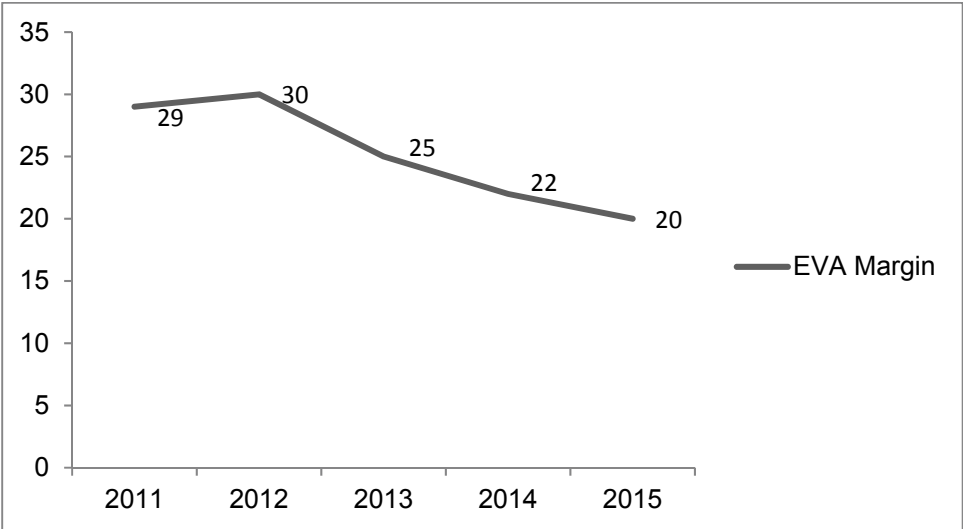
Source: own elaboration

When we look back at the development of basic EVA metric in the Table 6, we can see the significant increase from the year 2010 to 2011 which refers to the EVA growth of 9.23 %. However, while EVA was increasing also from 2011 to 2012, EVA Momentum slowed down to the 2.61 what is still a great value, however, has a declining character. In this we can see the sensitivity of the EVA Momentum to early changes in the company’s performance.

- *EVA Margin*

The second EVA ratio demonstrated in this thesis is EVA Margin. It is simply the ratio of EVA to sales. In more detail, it is the percentage of sales that falls to the EVA bottom line after deducting all operating and capital costs. It is basically the firm’s true economic profit margin. Picture 2 shows the development of company’s EVA Margin from the year 2011 to 2015.

Picture 2: Development of EVA Margin



Source: own elaboration

As we can see in the Picture 2, company belongs to the companies with rare and noteworthy EVA Margins over 20 %. Furthermore, its EVA Margin reached 29% in 2011 and 30% in 2012 that are remarkable values. These results point out the impressive productivity performance of the company.

4. CONCLUSION

In the general, there are traditional and modern approaches applied in the company’s performance evaluation. The main objective of this paper was to introduce the innovative modern methods of business performance evaluation on the selected company. The selected company has earned a highly positive economic profit after covering all resource costs (including cost of capital). The EVA has significantly increased from \$14656 million in 2010 to \$19127 million in 2015. It means that company’s management has created a great volume of wealth to its shareholders in the selected period. The company’s average EVA Momentum was 1.54 % in the selected period that is comfortable above the optimal level of 1 to 1.5%. It points out the outstanding performance of company. Further, company’s EVA Margin also shows remarkable values reaching 30% in 2012. It emphasizes the impressive productivity performance of the company. In our opinion, these modern methods have a chance to be used by management in business performance evaluation, setting targets and comparing the firm with other firms. Firstly, because they all are calculated after taking adjustments to accounting data to provide more real results. Secondly, they neutralize the capital and therefore enable to companies to compare with each other does not matter how capital intensive they are and in which industry they operate. Lastly, they reflect changes in their early stages while traditional indicator can still grow while company’s performance slows down or faces competitive pressures. However, we do not think new approaches will completely replace traditional methods because they are still valid and useful when viewed through cross-sectional (comparing a firm to other firms within the same industry) and time series analysis (comparing a firm’s progress over time). Based on the results we can conclude that Microsoft is a strong

and stable company. It continually creates and increases the value to the shareholders that is the most important fact to investors making decisions to which company they should invest.

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