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DEVELOPING A PRACTICAL MODEL FOR CALCULATING THE ECONOMIC VALUE ADDED

***Abstract.** The Economic Value Added (EVA) concept is a registered trademark (1990) of the US firm Stern Stewart & Co. and it is viewed as a measure of financial performance and also as potential main part of an integrated financial management system, leading to decentralized decision making and to maximize the shareholders' wealth. Our paper provides a synoptic survey of the use of EVA indicator and also gives the opinions of two main groups of EVA researchers: proponents of EVA and opponents to EVA. Furthermore, we develop a practical model for EVA calculation and try to make a parallel between Net Income as a measure of accounting profit and EVA as a measure of real economic profit. We also present a relevant example regarding the EVA calculation and give a special attention of the way of calculation of the three main components of EVA: net operating profit after taxes, weighted average cost of capital and economic asset (or invested capital). Also our articles emphasis some of the most important adjustments against accounting rules involved in the way of EVA calculation, in order to improve the correctitude of real economic profit calculation as a measure of value creation.*

***Key words:** economic value added, net operating profit after tax, weighted average cost of capital, invested capital, financial performance.*

JEL Classification: D21, G32, M42

1. Introduction

Economic Value Added is a registered trademark of the US firm Stern Stewart & Co. "From a commercial standpoint, Economic Value Added is the most successful performance metric used by companies and their consultants. Although much of its popularity is a result of able marketing and deployment by Stern Stewart, owner of the trademark, the metric is justified by financial theory and consistent with valuation principles, which are important to any investor's analysis of a company."¹

¹ David Harper, <http://www.investopedia.com>

Economic Value Added (EVA) is a measure of financial performance of a company and represents a powerful business tool which, if used correctly, promises to improve company performance and produce greater returns to shareholders. According to Stern, Stewart and Chew (1996), EVA is not just another performance measure, but can be the main part of an integrated financial management system, leading to decentralized decision making. Thus, the adoption of EVA should indirectly bring changes in management, which in turn can enhance firm value. In fact, several US companies (e.g. Coca Cola, AT&T, Briggs & Stratton, Quaker Oats etc.) which have adopted EVA as the basis of management performance measurement, have experienced a significant increase in their shareholders' wealth.²

Although, for the first time, the EVA model was applied by Stern Stewart & Co.(1990), a similar concept had been used by economists for many years before that. Thus, 1890, it was the famous economist Alfred Marshall, who first used the notion of economic profit, in terms of real profit that a company obtains when it cover, besides the various operating costs, the cost of its invested capital (equity and debts). The difference between the traditional measurement of profit (accounting profit or net income) and economic profit (EVA in the new version of Stern Stewart & Co.) is that the first do not consider all the cost of invested capital (equity and debts) used by company in order to develop her activity. More clearly, under the traditional approach the cost of equity is not taken in consideration (also said the equity is a free resource used by company).

While EVA and economic profit, basically, are based on the same principle – taking into consideration the cost of equity – there is also a difference between these two indicators: EVA is a modified version of economic profit where the modifications consist of accounting adjustments made in order to improve the correctitude of real economic profit calculation as a measure of value creation. Thus, if the accounting rules (such as GAAP in United States or Accounting Directive in Europe) distort the measurement of invested capital, of the cost of capital or operating income, we are free to make whatever adjustments in order to correct the inconvenience of accounting rules. The most adjustments are related to the “equity equivalents”. There are a lot of adjustments concerning provisions, deferred taxes, research and development or goodwill, that usually according to the accounting rules are considered as the charges (in the moment when these are made) and thus they reduce the value of invested capital on the balance sheet. Unless these charges are restored to the invested capital, capital charges will be understated. Operating income can also be mistakenly calculated.

All the adjustments made in order to calculate EVA are subordinated to the same objective: to correspond better to the idea that creating value for shareholders should be management's top priority. But, also, we consider important to emphasis that companies can deliver value to their shareholders only if they deliver value to all their stakeholders (employees, customers, suppliers, the

² Dimitris Kyriazis & Christos Anastassis (2007), “*The Validity of the Economic Value Added Approach: an Empirical Application*”, European Financial Management, Vol. 13, No. 1

environment and the local community). For example: if customers are not satisfied, they buy from competitors. If employees feel their talents are unappreciated and undervalued, they go elsewhere.³

2. Literature review

Despite the relatively recent adoption of EVA (for the first time, the EVA concept was used by Stern Stewart & Co in 1990) for as an internal and external financial performance measure, the literature regarding Economic Value Added is quite large. Many studies investigated the EVA indicator by often comparing it to other traditionally used performance measurements, and naturally two groups of researchers emerged in the EVA literature: proponents of EVA and opponents to EVA.⁴

The reference publication in the field of Economic Value Added is the Bennet Stewart' (1991) book, entitled "*The Quest for Value*". In this book, the author exposes his views about the usefulness of EVA, as a base indicator for company's performance measurement. This book aims to provide a more faithful reflection of how well companies create value than traditional profit or dividend measures. The author specifically recommends using EVA as the basis for calculating the variable portion of executive compensation, and suggests that financial restructuring can create value in two ways, by promoting aggressive debt utilization and delegating financing to business units. In his empirical research, Stewart examined the informational content for about 613 American companies and he observed a strong correlation (97%) between EVA and MVA (market value added). Some years later Stewart (1994) investigated the performance of more than 1000 American Companies and he found that the changes in EVA explains 50% of the changes in MVA (the remaining 50% is explained by the future EVA).

Two years later, *Fortune* published a cover story that discussed the benefits of EVA and a long list of major companies that adopted EVA as an evaluation tool (Tully, 1993). Several articles from prestigious business trade magazines such as *Forbes* and *Fortune* praised the use of EVA and provided a list of top performers based on EVA data from Stern Stewart & Co. (Fisher, 1995; Lieber, 1996; Rutledge, 1993; Teitelbaum, 1997 ; Tully, 1993; Walbert, 1994).

EVA was and, actually, is perceived as being a method of financial performance calculation and also as being a measure for the true profitability (economic profit) of a company that steers the company correctly from the viewpoint of shareholders. Many researchers agree that EVA has a highest explanatory power of shareholders' value (stock returns) than other traditional indicators and leads to increase operational efficiency (Wallace, 1996; Lehn and Makhija, 1997; Zimmerman, 1997, Kleiman, 1999).

³ David Young, "*Groupe Schneider: Economic Value Added and the Measurement of Financial Performance*", INSEAD, Fontainebleau, France, 1998

⁴ Seoki Lee & Woo Gon Kim (2009), "*EVA, refined EVA, MVA, or traditional performance measures for the hospitality industry?*", International Journal of Hospitality Management

Several studies found a relationship between EVA and MVA (Market Value Added) such as: EVA explains a significant portion of MVA (Grant, 1996)⁵; EVA explains more variations of MVA when compared to some traditional accounting measures such as EPS, ROE, ROA and net income (Uyemura et al., 1996), when compared to NOPAT (O'Byrne, 1996)⁶, and when compared to EPS growth and free cash flow (Milunovich & Tsuie, 1996)⁷.

But, several other empirical researches infirm the superiority of informational content of the EVA against other indicators such as: operational income or return on assets, Thus, Dodd and Chen (1996) found that EVA can explain only 20% of the variability of stock returns, in contrast with ROA which can explain 24.5 of the corresponding variability. They found that EVA appeared to have higher explanatory power when it was compared with ROE and EPS, but when it was compared with a simple measure of residual income (without the accounting adjustments of Stern Stewart) they could not identify any significant incremental informational content. Biddle et al. (1997) also found empirical results against the validity of EVA. Their empirical research using a large sample of American companies for the 1983–94 periods discovered that the earnings before extraordinary items (EBEI) had greater explanatory power of stock returns than EVA, residual income and operational cash flows (OCF). Clinton & Chen (1998) also found that residual cash-flow (RCF) is a better indicator for performance measurement than EVA and Kramer & Pushner (1997)⁸ found that NOPAT explains more of the variations of MVA than EVA.

Furthermore, in a recent study, Fernandez (2001) found that for more than 50% of companies the changes in the NOPAT (net operational profit after taxes) have a higher correlation with the changes in MVA (market value added) than the corresponding changes in EVA. Also, the Peixoto (2002) study, using European data, found that the net income variable has a higher informational content than EVA and operating profits, when the dependent variables is the market value of the companies.

Contrasting these two groups, Bacidore et al. (1997) proposed the use of a refined EVA (REVA) in which market value of the firm's assets should be used in EVA calculations, rather than book value of assets because the capital charge for the firm is based on its market-based weighted average cost of capital (WACC). They compared REVA to EVA in terms of explanatory power for abnormal returns and found REVA to have better explanatory power than EVA. One other recent study of Seoki Lee & Woo Gon Kim (2009), compares the incremental explanatory power of six firm performance measures including EVA, refined EVA (REVA), market value added (MVA), and three traditional accounting performance

⁵ Grant, J.L. (1996), "Foundations of EVA for investment managers", Journal of Portfolio Management, 23(1)

⁶ O'Byrne, S.F. (1996), "EVA and market value", Journal of Applied Corporate Finance 9 (1)

⁷ Milunovich, S. & Tsuie, A. "EVA in the computer industry", Journal of Applied Corporate Finance 9 (1)

⁸ Kramer, J.K. & Pushner, G. (1997), "An empirical analysis of economic value added as a proxy for market value added", Financial Practice and Education 7 (1)

measures for market adjusted returns. According to the findings, REVA and MVA are, apparently, valuable performance measures for evaluating firms.⁹

However, EVA appeared to have a superior informational content when the dependent variable is the MVA. The latter finding implies that EVA may perform well as a measure of evaluation of management performance, when the goal is the maximization of shareholders' wealth.¹⁰ When the objective is to examine the performance of the companies which have adopted control measures based on EVA or MVA then researchers (Lehn and Makhija, 1997; Kleiman, 1999) agree that EVA has the highest explanatory power of stock returns than any other variable and leads to increased operational efficiency (Wallace, 1996; Lehn and Makhija, 1997; Zimmerman, 1997).

3. The theoretical model of EVA calculation

In order to develop a model for EVA calculation, we assume the following basic hypothesis: the management's main responsibility is to create as much wealth as possible for shareholders. More clearly, the using of EVA indicator corresponds better with the final objective of the enterprise that is: *the maximization of shareholders' value*. "The economic neoclassic theory and financial theory identified, as a major objective of the enterprise the maximization of the value of the enterprise or maximization of shareholders' wealth. Originally, the major objective was maximization of the profits of the enterprise as a main source for increasing the value of the enterprise."¹¹

Now, more than other times managers feel pressure to perform, but often lack the necessary diagnostic tools. They lack the language of value creation that is "a means of convincing capital providers that funds will be productively and profitably employed in their companies. Managers who fail in this task will find their companies at a competitive disadvantage in the race for global capital resources."¹²

For responding better at this aspect, the US firm Stern Stewart & Co was developed the EVA indicator. As we mentioned above EVA is a measure of profit and it is calculated using the elements from accounts statements (e.g. income statement, balance sheet). But, contrarily to the accounting profit calculation (Net Income), EVA it is not bound by accounting conventions. If the accounting rules (such as GAAP in United States or Accounting Directive in Europe) distort the measurement of invested capital, of the cost of capital or operating income, we are free to make whatever adjustments that are necessary in order to improve the correctitude of EVA calculation as a measure of value creation.

⁹ Seoki Lee & Woo Gon Kim (2009), "EVA, refined EVA, MVA, or traditional performance measures for the hospitality industry?", International Journal of Hospitality Management

¹⁰ Dimitris Kyriazis & Christos Anastassis, "The Validity of the Economic Value Added Approach: an Empirical Application", European Financial Management, Vol. 13, No. 1, 2007

¹¹ Ion Stancu, "Finance. Financial Markets and Portfolio Management. Direct Investment and their Finance. Corporate Financial Management", Ed. Economica, Bucharest, 2007

¹² David Young (1998), "Groupe Schneider: Economic Value Added and the Measurement of Financial Performance", INSEAD, Fontainebleau, France

EVA is a new and modified version of economic profit where the modifications consist of accounting adjustments designed to convert **accounting profit (net income)** and accounting capital to **economic profit (economic value added)** and economic capital.

The main three differences between Net Income (Accounting Profit) and Economic Value Added (Economic Profit) are presented in the following table:

Table 1. The difference between Net Income and Economic Value Added

Accounting Profit (Net Income)	Economic Profit (EVA)
It is related to the maximization profit (net income) as the final objective of the enterprise.	It is related to the maximization shareholders' wealth as the final objective of the enterprise.
Do not take into consideration the cost of equity capital (take into consideration only the cost of debts, but the cost of equity is considered zero).	Take into consideration the cost of equity capital (generally the cost of equity is bigger than the cost of debts).
Take into consideration and strictly follow all the accounting rules (such as Generally Accepted Accounting Principles –GAAP- in United States or Accounting Directive in Europe).	Offer the possibility to make whatever needed adjustments in order to improve the correctitude of economic profit calculation, when the accounting rules distort the economic reality.

According to the Stern Stewart Company, EVA is a performance evaluation measure and is calculated as being “net operating profit after taxes less the cost of the capital of both equity and debt employed to produce those profits”¹³. The formula is as follows:

$$EVA = \text{Net Operating Profit After Taxes} - \text{Capital Charges}$$

$$EVA = NOPAT - WACC * EA, \text{ or}$$

$$EVA = (ROA - WACC) * EA$$

NOPAT = Net Operating Profit After Taxes

WACC = Weighted Average Cost of Capital

EA = Economic Asset or Invested Capital

ROA = Return on Assets [ROA = NOPAT/EA and NOPAT = EBIT-T]

EBIT = Earnings Before Interest and Taxes

T = Taxes

EVA tells corporate managers and investors if the value of a business has been created or has been destroyed. Thus:

- **If EVA > 0:** means the project will add value for shareholders;

¹³ G. Bennett Stewart (1991), “*The Quest for Value: A Guide for Senior Managers*” Harper Business, New York

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- **If EVA < 0:** means they would be better off if management just gave them the money as a dividend.

For explaining the way of EVA calculation and for observing better the differences between EVA and NI, we decided to start from the classical and most common formula for net income.

Table 2. The way of Net Income Calculation

Sales (Turnover)
- Variable Expenses
- Fixed Expenses
= EBITDA (Earning Before Interests, Taxes, Depreciation & Amortization)
- Depreciation & Amortization
= EBIT (Earning Before Interests and Taxes)
- Interests
= EBT (Earning Before Taxes)
- Taxes
= NI (Net Income)

These formulas are a very simply and it assumes the following hypothesis:

- **For Operating Activity:** - All the operating revenues are from sales (turnover)
 - All the operating expenses are can be classified variable and fixed expenses (inclusive amortization and depreciation which represent non- payable fixed expenses)
- **For Financial Activity:** There are not financial revenues and all financial expenses are Interests.
- **For Extraordinary Activity:** There are not extraordinary revenues and expenses.

Synthetically, the formula for **net income** is:

Table 3. The NI basic formula

$NI = SA - VE - FE - DA - I - T$
$EBITDA = SA - VE - FE$
$EBIT = EBITDA - DA$
$EBT = EBIT - I$
$NI = EBT - T$

Taking into consideration the above considerations, the Operating Profit (OP) - the difference between the Operating Revenues and Operating Expenses - corresponds to the Earning Before Interests and Taxes (EBIT) indicator.

But EVA supposes to take into consideration the Net Operating Profit After Tax (NOPAT). That means: $NOPAT = EBIT - T$

Table 4. The main difference between EVA and Net Income Calculation

Net Income (NI)	Economic Value Added (EVA)
EBIT	EBIT
- Interests	- Taxes
- Taxes	- <u>Capital Charges</u>
= NI	= EVA

Basically, in terms of mathematic formula, the difference between EVA and Net Income are pointed out in the following table:

Table 5. The relationship between EVA and Net Income

Net Income (NI)	Economic Value Added (EVA)
Objective: Max (Profit of Enterprise)	Objective: Max (Shareholders' Value)
$NI = (SA - VE - FE - DA) - \underline{I} - T$ $NI = (OP - T) - \underline{I}$ $NI = NOPAT - \underline{I}$ or $NI = (EBIT - T) - \underline{I}$ $OP = SA - VE - FE - DA = EBIT$	$EVA = (SA - VE - FE - DA) - \underline{CC} - T$ $EVA = (OP - T) - \underline{CC}$ $EVA = NOPAT - \underline{CC}$ or $EVA = (EBIT - T) - \underline{CC}$, (CC = I + EqC), very basically
So that, very basically, $EVA = NI - EqC$	

The abbreviations used in the above table have the following signification:

SA = Sales	T = Taxes
VE = Variable Expenses	OP = Operating Profit
FE = Fixed Expenses	NOPAT = Net Operating Profit After Taxes
DA-Depreciation and Amortization	CC = Capital Charges
I = Interests	EqC = Cost of Equity

(In a very simplification manner we can say that $CC = I + EqC$)

So that, very basically, we can conclude that EVA is the difference between Net Income and Cost of Equity.

4. A practical model of EVA calculation

For giving an example of the of calculation of EVA indicator we will use the accounting statements of the “Alpha International Group”: Consolidated Income Statement and Consolidated Balanced Sheet¹⁴ (**Table no. 7 and Table no.8**).

As we mentioned above, according to the Stern Stewart Company, the EVA formula is:

$$EVA = Net\ Operating\ Profit\ After\ Taxes - Capital\ Charges$$

¹⁴ Our example is an adapted version about the case Schneider Group written by Professor David Young at INSEAD, The Business School for the World

$$EVA = NOPAT - WACC * EA$$

That means, in order to calculate EVA, we need calculate before, three more important elements:

- 1) Net Operating Profit After Taxes
- 2) Economic Asset (or invested capital or capital charged)
- 3) Weighted Average Cost of Capital

4.1. The calculation of Net Operating Profit After Tax

NOPAT is the company's operating profit, net of tax, and measures the profits of the company that was generated from its ongoing operations. The basic formula of EVA ($EVA = NOPAT - WACC * EA$) take into consideration the hypothesis mentioned above: there are not financial revenues and all financial expenses are interests; there are not extraordinary revenues and expenses.

But in our example we are also other elements such as:

- Financial revenues (Interest Income)
- Extraordinary expenses (Non-recurring items)
- Other expenses that can be assimilated to the operational expenses (Amortization of Goodwill, Equity losses)
- Other elements (Employee profit-sharing and Minority interests) that are shared with the stakeholders as a consequence of obtained positive results and we do not have to take into consideration when we calculate operational profit for EVA calculation.

Thus in our case, the value of NOPAT is 119.485 and this value was calculated such in the following table:

Table 6 . The calculation of Net Operating Profit after Tax

<i>The calculation of Net Operating Profit After Tax</i>	
Operating Income	128.300
Interest income	5.500
Goodwill amortization	(5.250)
Equity loss	(150)
Income tax	(5.027)
Tax shield on interest expense	(3.888)
NOPAT	119.485

Table 7. Income Statement

	Year N
Sales	1.057.700
Total Operating Revenues	1.057.700
Cost of sales	660.000
R&D expenses	32.000
Gener & Administrative expenses	215.000
Depreciation & amortization	22.400
Total operating expenses	929.400
Operating Income	128.300
Interest income	5.500
Interest expense	15.550
Interest expense - net	-10.050
Income from continuing operations before tax	118.250
Non-recurring items	3.200
Employee profit-sharing	400
Income taxes	5.027
Net income of fully consolidated companies before amortization of goodwill	109.623
Amortization of goodwill	5.250
Net income of fully consolidated companies	104.373
Group's share of income/(loss) of companies accounted for by the equity method (Equity loss)	150
Net income before minority interests	104.223
Minority interests	530
Net income	103.693

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Table 8. Balance Sheet	Year N	Year N-1
Noncurrent assets:		
Other intangible assets net	1.100	1.510
Goodwill, net	186.000	184.720
Net property, plant & equipment	92.875	91.503
Investments accounted for by the equity method	240	965
Investments at cost	17.577	16.154
Other investments	23.650	18.100
Total non-current assets	321.442	312.952
Current assets		
Inventories and work in process	82.700	88.100
Accounts receivable, trade	100.550	107.100
Other receivables and prepaid expenses	73.338	41.820
Deferred taxes	25.320	18.588
Cash and short term investments	61.750	53.000
Total current assets	343.658	308.608
Total assets	665.100	621.560
Current liabilities		
Accounts payable; trade	82.700	84.070
Taxes and benefits payable	50.200	45.850
Other payables and accrued liabilities	38.800	30.560
Short term debt	41.000	49.150
Customer prepayments	16.140	15.355
Total current liabilities	228.840	224.985
Perpetual subordinated bonds	21.890	23.315
Long-term debt	69.075	72.110
Provisions for contingencies	72.115	58.230
Provisions for pensions	33.130	29.100
Total LM term liabilities	196.210	182.755
Capital Stock	87.000	85.000
Retained Earnings	147.950	120.620
Shareholders' equity	234.950	205.620

Minority interests	5.100	8.200
Total shareholders' equity and minority interest	240.050	213.820
Total liabilities and shareholders' equity	665.100	621.560

When we calculated NOPAT for EVA calculation, we also eliminated the tax shield on interest expense. The logical explanation of this aspect is the following: when we calculate NOPAT, the interest expenses are not taken into consideration, because these expenses (deductibles from fiscal point of view) are considered as a part of capital charges (they represent the cost of debts).

As we mentioned above, very basically, EVA is the difference between Net Income (Net Profit) and Cost of Equity. If the cost of equity is zero, the Net Profit is equal with EVA. For understanding the basic principle of calculating NOPAT and the role of tax shield on interest expenses, we give a little example:

Table 9. The main differences between the EVA and Net Profit calculation

<i>The Net Profit Calculation</i>		<i>The EVA calculation</i>	
Operating Revenues	5.000	Operating Revenues	5.000
Operating Expenses	2.500	Operating Expenses	2.500
Operating Profit	2.500	Operating Profit	2.500
Interest Expenses	1.000	Taxes	375
Profit Before Taxes (EBT)	1.500	<i>Tax Shield on interest expenses (25%*1000)</i>	250
Taxes (25%)	375	NOPAT	1.875
		<i>Capital Charge (75%*1000)</i>	750
Net Profit	1.125	EVA	1.125
Hence, in this case the Net Profit is equal with EVA			

4.2. The calculation of Economic Asset or Invested Capital

Economic Asset (Invested Capital) is the sum of all of the company's financing, apart from short-term NIBL (non-interest-bearing liabilities such as: accounts payable, accrued wages, accrued taxes and other payable and accrued liabilities). Thus the invested capital is the sum of shareholders' equity and all interest bearing debt (both short-term and long-term)¹⁵. In the EVA calculation, long-term NIBL are considered equity equivalents and are included in shareholders' equity. Thus invested capital equals net assets, or total assets minus short-term NIBL.

For our calculating EVA we must to transform the accounting balance-sheet (normal balance-sheet, on the left) in an economical balance-sheet (balance sheet using for financial analysis, on the right).

¹⁵David Young, "Groupe Schneider: Economic Value Added and the Measurement of Financial Performance", INSEAD, Fontainebleau, France, 1998

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We explain the way of Economic Asset (EA) calculation for the end of year (Year N).

Table 10. The differences between Accounting Balance Sheet and Economic Balance Sheet

Accounting Balance Sheet		Economic Balance Sheet	
Fixed Assets	Shareholders' EQUITY	Fixed Assets	Shareholders' EQUITY*
321.442	240.050	321.442	345.295
	Long-term NIBL		
	105.245		
Current Assets	Long-Term Debts	Net Current Assets	DEBTS*
343.658	90.965	155.818	131.965
	Short-Term Debts		
	41.000		
	Short-Term NIBL		
	187.840		

In order to calculate our invested capital, we make the average of invested capital (average of the invested capital value at the beginning and at the end of year). In the following table we present the value of EA both for the beginning and for the end of year, and also the average of EA, that it is used for calculating the capital charges.

Table 11. The calculation of average Economic Asset

	N	N-1	Average
EQUITY	345.295	301.150	323.223
DEBTS	131.965	144.575	138.270
Economic Asset (EA)	477.260	445.725	461.493

4.3. The calculation of Weighted Average Cost of Capital

WACC is the sum of the cost of each component of capital (shareholders' equity and debts) weighted for their relative proportions, at market value, in the company's capital structure. For calculating the WACC, the most used model is the Modigliani-Miller model.

$$WACC = K_{eq} \cdot \frac{Equity}{Invested\ Capital} + K_d \cdot \frac{Debts}{Invested\ Capital}, \text{ where}$$

- $K_{eq} = R_f + (R_M - R_f) \cdot \beta$ - (the CAPM Model of the cost of equity Capital)
- $K_d = i \cdot (1 - t)$,
 Keq = cost of equity (The expected return for a security)
 Kd = cost of debts
 Rf = the expected risk-free return in the market (government bond yield)
 R_M = the expected return on a broad index of stock market
 performance (like the Standard & Poor.s Composite 500 Index -S&P 500).
 β = the sensitivity (volatility coefficient) to market risk for the security
 i = interest rate
 t = tax rate

For calculating WACC we assume the following hypothesis:

- The cost of equity capital is: K_{eq}=15%
- The average interest rate is: K_d=12%
- The group average tax rate is: t=25%

Taking into consideration the above hypothesis, our WACC is 13.20% and the way of his calculation is presented in the following table: Table no.12.

Table 12. The calculation of WACC

	Average	
Equity	323.223	
Debts	138.270	
Invested Capital	461.493	
Equity cost (Keq)	15%	
Equity (%)	70,04%	
Interest rate (i)	12%	
Tax rate (t)	25%	
Debts' cost (kd)	9,00%	
Debts (%)	29,96%	
WACC	13,20%	

Table 13. The calculation of EVA

<i>The calculation of EVA</i>	
NOPAT	119.486
Economic Asset	461.493
WACC	13,20%
Capital charges	60.928
EVA	58.558

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Now, because we know all the three elements (NOPAT, EA, WACC) needed for calculating EVA, we calculate the EVA value: Table no. 13.

Company's operating profit exceeds its financial costs, hence the positive EVA (58.558). This figure suggests that Alpha International Group is a value constructor. The bigger expected EVA the company has, the bigger is the market value of the company and the stock price. Especially profitable growth (growth in EVA) gears up stock prices.

5. CONCLUSIONS

Economic Value Added is a performance evaluation measure and it is calculated as being net operating profit after taxes less the cost of the capital of both equity and debt employed to produce those profits. As we can be seen in the above developed model for calculating EVA we need to calculate before the main three components of EVA: **Net Operating Profit After Taxes (NOPAT)**: the profits of the company that is generated from its ongoing operations; **Weighted Average Cost of Capital (WACC)**: the sum of the cost of each component of capital (shareholders' equity and debts) weighted for their relative proportions, at market value, in the company's capital structure; **Economic Asset (EA)**: the sum of all of the company's financing, apart from short-term NIBL (non-interest-bearing liabilities such as: accounts payable, accrued wages, accrued taxes and other payable and accrued liabilities).

Against to Net Income (accounting profit) that is related to the profit maximization, as the final objective of the enterprise, the Economic Value Added (economic profit) is subordinated to the shareholders' wealth maximization, as the final objective of the enterprise. Furthermore, against to Net Income, that considers free the cost of equity (the cost of equity is considered zero and considers only the cost of debts), EVA take into consideration both the cost of debts and the cost of equity (generally the cost of equity is bigger than the cost of debts). Also, we want mention that against net income that has a unique calculated value, we can have different EVA values for the same enterprise at the same moment. That is result as the numerous adjustments against accounting rules (such as GAAP in United States or Accounting Directive in Europe) made by analysts when they considers that the accounting rules distort the reality: the measurement of invested capital, of the cost of capital or operating income. In this case we are free to make whatever adjustments that are necessary in order to improve the correctitude of EVA calculation as a measure of value creation.

As a conclusion, EVA corresponds better to the idea that creating value for shareholders should be management's top priority and it is more adapted to the value-based management system. But, also, we consider important to emphasis that companies can deliver value to their shareholders only if they deliver value to all their stakeholders: employees, customers, suppliers, the environment, the local community and so on.

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