

## **Analysing performance through value creation**

Adrian TRIFAN<sup>1</sup>, Gheorghe SUCIU<sup>2</sup>

**Abstract:** *This paper draws a parallel between measuring financial performance in 2 variants: the first one using data offered by accounting, which lays emphasis on maximizing profit, and the second one which aims to create value. The traditional approach to performance is based on some indicators from accounting data: ROI, ROE, EPS. The traditional management, based on analysing the data from accounting, has shown its limits, and a new approach is needed, based on creating value. The evaluation of value based performance tries to avoid the errors due to accounting data, by using other specific indicators: EVA, MVA, TSR, CVA. The main objective is shifted from maximizing the income to maximizing the value created for shareholders. The theoretical part is accompanied by a practical analysis regarding the creation of value and an analysis of the main indicators which evaluate this concept.*

**Key-words:** *value creation, total shareholder return, economic value added, market value added, cash value added*

### **1. Introduction**

Establishing a company's performance is a topical subject which concerns those involved in economic activities: shareholders, managers, employees, creditors, clients, banks, central or local organs of administration. In the beginning, profit was considered to be the most representative indicator to evaluate performance. Lately, performance is associated to the concept of value creation.

The English economist Alfred Marshal, in his work *Principles of Economics*, from 1890, considered that profit is what remains after the deduction of the interest of the capital invested at a current rate (what we now call the rate of return wanted by the shareholders).

In 1961, Franco Modigliani and Merton Miller, published in the *Journal of Business*, an article called *Dividend Policy, Growth and the Valuation of Shares*, in which they presented the concept of value creation management.

Globalization led to a very fast movement of capital. Investors want to recover the invested amounts under low risk condition. Recovering the investments

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<sup>1</sup> Transilvania University of Braşov, [adrian.trifan@unitbv.ro](mailto:adrian.trifan@unitbv.ro)

<sup>2</sup> Dimitrie Cantemir Christian University from Bucharest, [ucdc.suciu.g@gmail.com](mailto:ucdc.suciu.g@gmail.com)

must pay attention to the performance-risk correlation. Unfortunately, there is no consensus about measuring a company's performance. However, it is certain that the financial performance is directly related to the creation of value.

Alfred Rappaport was the one, who first investigated the use of other indicators regarding financial performance, and in 1998, his book, "Creating Shareholder Value", introduced the concept of shareholder value, and companies started to evaluate management by taking this indicator into account.

After that, Andrew Black, in his work "In Search of Shareholder Value: Managing the Drivers of Performance" showed that using the concept of value brings benefits not only to shareholders, but to everyone involved in the company. The author believes that the companies that obtain a higher value for their shareholders are more attractive to investors.

## 2. The concept of value creation

**Value** is an economic concept which regards the exchange or use of an asset or property. By taking into account the time variable, there can be 3 values:

- a) a value based on the historical data from accounting;
- b) a present value, taking into account the market value;
- c) a value based on future benefits.

The value created by the company takes into account on the one hand the present value of the invested capital, and on the other hand, the present value of future flows, according to the formula:

$$VC (VD) = VM - V_{pki}$$

where: VC (VD) = created value (destroyed value);

VM = market value of ownership equity at the moment of the analysis;

V<sub>pki</sub> = present value of the capital invested by the shareholders.

The present value of invested capital includes the capital invested initially and the reinvested annual profit by the shareholders.

The market value (VM) is evaluated by taking into account the company's future cash flow as a result of the invested capital, according to the formula:

$$VP = \sum_{i=1}^n Vf_i \frac{1}{(1 + Coe)^i}$$

where: VP = present value of future cash flows;

V<sub>f<sub>i</sub></sub> = value of future flows in the year "i";

Coe = cost of ownership equity;

n = number of years of investment.

The present value of the capital invested by the shareholders ( $V_{pki}$ ), represents the capitalized sum of the elements of ownership equity, according to the formula:

$$V_{pki} = V_{pki} \sum_{i=1}^n V_{k_i} (1 + Coe)^i$$

where:  $V_{k_i}$  = Value of capital invested in year “i”;  
 Coe = cost of ownership equity;  
 n = number of years of investment.

If the present value of future cash flows (VP) is higher than the present value of the capital invested by the shareholders ( $V_{pki}$ ), then there is value creation. If VP is lower than  $V_{pki}$ , then there is value destruction.

### 3. Evaluating a company's performance

The indicators which show a company's performance can be divided into two categories: indicators from accounting data and indicators which analyse the value creation.

**Indicators from accounting data** show performance by using past, historical values, which do not always reflect reality. Examples of indicators which can reflect performance: ROI, ROE, EPS.

**ROI (Return on Investment)**, represents the rate of economic return and it is calculated as:

$$ROI = \frac{EBIT(1 - \tau)}{OE + DT_{FIN}}$$

where: EBIT = earning before interest and taxes;  
 $\tau$  = quota of income tax;  
 OE = ownership equity;  
 $DT_{FIN}$  = financial debts;  
 $OE + DT_{FIN}$  = economic asset (EA).

**ROE (Return on Equity)** rate of financial return measures the way in which the shareholders are happy with the investments done in the company. ROE is determined as follows:

$$ROE = \frac{(EBIT - \text{debts})(1 - \tau)}{OE} = ROI + \left[ ROI - R_e(1 - \tau) \frac{DT_{FIN}}{OE} \right]$$

where:  $R_e$  = rate of interest.

EPS (Earnings per share) represents the income per share which a company can pay partially or fully as dividends or which it can reinvest. EPS is calculated after the payment of taxes and of dividends to owners of option shares and after the payment of interest rates for those who own bonds in use, issued by the company, according to the formula:

$$\text{EPS} = \frac{\text{Net profit} - \text{Debenture dividends}}{\text{Number of issued share}}$$

It is thought that the company with the highest EPS creates more value.

We believe that the aforementioned indicators do not fully reflect the value creation because:

- The accounting results are influenced by the used accounting policies (amortization, the way in which stocks have been highlighted and evaluated, borrowing costs);
- No discount rate is used (time value of money);
- ROE has a higher value if more loaned capital is used; the higher the degree of indebtedness, the higher ROE;
- Being accounting results, the opportunity costs are not taken into consideration;
- Accounting income does not reflect the company's financial policy, like for example the degree of indebtedness.

**The indicators which measure value creation** are the following: TSR (Total Shareholder Return), EVA (Economic Value Added), MVA (Market Value Added), CFROI (Cash-flow Return on Investment), CVA (Cash Value Added).

TSR is specific to companies that are listed on the exchange and it represents the earnings obtained by the shareholders from the price increase of received shares and dividends:

$$\text{TRS} = N_s \times (\text{Price}_1 - \text{Price}_0 + \text{Dps})$$

where:  $N_s$  = number of shares;

$\text{Price}_1$  = current price of share;

$\text{Price}_0$  = initial price of share;

$\text{Dps}$  = dividend per share.

EVA is an indicator which shows the management's efficiency by taking into consideration the cost of invested capital and the achieved performance:

$$\text{EVA} = \text{Net operational profit} - \text{Permanent capital} \times \text{Cost of capital}$$

$$\text{EVA} = (\text{RI} - \text{Wacc}) \times \text{AT}$$

$$\text{Net operational profit} = \text{Operating income} - \text{Operating expenses} - \text{Profit tax}$$

where: RI = net operational profit/ permanent capital;  
 Wacc = weighted average cost of capital;  
 AT = total assets.

Using the EVA indicator helps managers adopt the most favourable investments, taking into consideration both short and long term benefits. If EVA is positive, then the company's value will increase, and if it is negative, the shareholders' value will decrease.

MVA is a concept developed by the Stern Steward & Co. consulting firm, and it is calculated as the difference between the entity's market value and the capital's value. In fact, MVA represents the market's evaluation, taking into account the updated value of all future EVA, at a certain point. MVA implies comparing 2 values:

- a) the accounting value of the total of invested capital (ownership equity and loaned capital);
- b) the entity's market value at a certain point.

$$\text{MVA} = \text{market value} - \text{total adjusted capital}$$

MVA = market value of all future EVA

If  $\text{MVA} > 0$ , it means that the capital's market value is higher than its accounting value, and management creates value for the investors, meaning it is efficient.

If  $\text{MVA} < 0$ , it means that the value added by the market (present) is inferior to the accounting value (past), and the investors' wealth has been destroyed because the real market value of their capital is lower than the value of their initial investment.

CVA was elaborated by the Boston Consulting Group (BSG) and it is a useful indicator, which allows managers to choose between improving profitability or extending activities.

$$\begin{aligned} \text{CVA} &= \text{CFG} - \text{A} - \text{CC} \\ \text{CFG} &= \text{PN} + \text{I} + \text{A} \end{aligned}$$

where: CFG = gross cash flow;  
 A = amortization;  
 CC = cost of capital used for financing activities (permanent capital);  
 PN = net profit;  
 I = interest expenses.

**In addition to the theoretical part**, we present 2 case studies regarding the establishment and analysis of the created value, respectively of the added economic value.

1) A company was started in 2008, with a social capital of 15,000 lei and has obtained the following results:

- In the year 2008 a loss of 800 lei;
- In 2009 a profit of 2,400 lei, from which dividends were given amounting to 40%;
- In 2010 a profit of 5,600 lei, from which 25% was given as dividends;
- In the year 2011 a profit of 7,000 lei, from which 30% was given as dividends;
- In 2012, a profit of 1,900 lei, all the profit was reinvested;
- In 2013, a loss of 1,500 lei;
- In 2014, a profit of 3,200 lei, from which 20% was given as dividends.

The rate of return demanded by the shareholders was 6% between 2008 and 2014. Between 2016 – 2022, the following cash flow is expected: 5,800 lei, 6,400 lei, 7,700 lei, 7,900 lei, 8,400 lei, 8,200 lei, 8,000 lei. The following two values are taken into consideration for the discount factor: 7% for the pessimistic variant, where the cost of capital is higher because of the risk premium and 5% in the optimistic variant. Under these conditions, did the company create or destroy value?

We establish the reinvested profit by subtracting the dividends from the net profit. For 2009 we have  $2.400 - 2.400 \times 40\% = 1,440$  lei.

$$\begin{aligned} V_{pk_i} &= \sum_{i=1}^n V_{k_i} (1 + Coe)^i = 15,000 \times 1.06^7 + 1,440 \times 1.06^6 + 4,200 \times 1.06^5 + \\ &+ 4,900 \times 1.06^4 + 1,900 \times 1.06^3 + 2,560 \times 1.06 = 22,554 + 2,043 + 5,621 + \\ &+ 6,186 + 2,263 + 2,714 = 41,381 \text{ lei} \end{aligned}$$

The present value of the capital invested by the shareholders ( $V_{pki}$ ) is 41,381 lei.

In the pessimistic variant, the discount factor is 7%, the present value of future cash flows (VP) is:

$$\begin{aligned} VP &= \frac{5,800}{1.07^1} + \frac{6,400}{1.07^2} + \frac{7,700}{1.07^3} + \frac{7,900}{1.07^4} + \frac{8,400}{1.07^5} + \frac{8,200}{1.07^6} + \frac{8,000}{1.07^7} = 5,421 + 5,590 + \\ &+ 6,285 + 6,027 + 5,989 + 5,464 + 4,982 = 39,758 \text{ lei} \end{aligned}$$

$$VD = VP - V_{pki} = 39,758 - 41,381 = - 1,623 \text{ lei}$$

In this case we have a destroyed value (VD) of 1,623 lei, because the market value of the capital invested by the shareholders is higher than the present value of future cash flows.

In the optimistic variant where the discount factor is 5%, VP is:

$$VP = \frac{5,800}{1.05^1} + \frac{6,400}{1.05^2} + \frac{7,700}{1.05^3} + \frac{7,900}{1.05^4} + \frac{8,400}{1.05^5} + \frac{8,200}{1.05^6} + \frac{8,000}{1.05^7} = 5,523 + 5,805 + 6,652 + 6,499 + 6,582 + 6,119 + 5,685 = 42,865 \text{ lei}$$

$$VC = VP - V_{pki} = 42,865 - 41,381 = 1,484 \text{ lei}$$

In this case, we have a created value (VC) of 1,484 lei, because the market value of the capital invested by the shareholders is lower than the present value of future cash flows.

2) An economic entity has the following data:

No.	Indicator	Symbol	2012	2013	2014
1	Ownership equity (thousands lei)	OE	11,160	12,500	14,000
2	Loaned capital (thousands lei)	DT <sub>FIN</sub>	7,440	6,731	6,000
3	Economic asset (1 + 2) (thousands lei)	EA	18,600	19,231	20,000
4	Ratio of ownership equity in invested capital (1 / 3)	% OE	60%	65%	70%
5	Ratio of loaned capital in invested capital (2 / 3)	% DT <sub>FIN</sub>	40%	35%	30%
6	Rate of risk-free interest	Rf	6%	5.5%	5%
7	Market premium	Rm - Rf	7%	7%	6%
8	Volatility coefficient	β	1.15	1.10	1.05
9	Cost of ownership equity (7 + 8 x 9)	C <sub>OE</sub>	14.05	13.2	11.3
10	Interest of loaned capital	d	7%	7%	6%
11	Weighted average of capital	Wacc	11.23%	11.03%	9.71%
12	Cost of invested capital (3 x 11) (thousands lei)	C <sub>EA</sub>	2,089	2,121	1,942
13	Operating results (thousands lei)	EBIT	2,400	4,000	4,600
14	Profit tax (16%) (thousands lei)	Pt	384	640	736
15	Net operating profit after tax (13 - 14) (thousands lei)	NOPAT	2,016	3,360	3,864
16	Economic added value (15 - 12) (thousands lei)	EVA	- 73	1,239	1,922
17	Economic added value / invested capital (16 / 3)	EVA/EA	- 0.39%	6.44%	9.61%
18	Return on investment (15 / 3)	ROI	10.83%	17.47%	19.32
19	Return on equity	ROE	17.74%	31.77%	36.48%

Table 1

In 2012 NOPAT is 2,016, but this value is inferior to the cost of invested capital (2,089), and consequently EVA has a negative value. In 2013 and 2014 EVA is positive, showing the fact that the entity added economic value. ROI and ROE have both overrated value because they do not take into account the cost of invested capital and consequently the financial performance is also overvalued.

#### 4. Conclusions

For a long time, financial performance was measured through the accounting result, base on the belief that profit equals performance. Due to the multitude of permitted alternative methods and treatments, the accounting result is influenced by the evaluation methods, the company's intention, by the rules arbitrarily fixed by the standardizers. In order to judge correctly the company's performance, one must know very well its accounting policy.

The ROI, ROE and EPS indicators are arguments especially for the management to accept some investment projects, even if they do not create value. In many cases the remuneration of the CEO and CFO is tied to the value of these indicators; this can explain the interest to keep using them, because they overvalue the financial performance. EVA, MVA, CVA, TSR are useful because they compare financing costs with the return on invested capital.

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