

# When do companies really create value? a comparative synopsis of EVA, CFROI AND EBM.

## Key words and abbreviations

Economic Value Added (EVA)  
Expectations-based Management (EBM)  
Cash Flow Return on Investment (CFROI)

## Introduction

For some time now, it has dawned on the finance fraternity that there are weak relationships between indicators of shareholder wealth and the traditional accounting measures of financial performance. This realisation has sparked new interest in efforts to trace the real drivers of shareholder value in order to measure and incentivise company performance better and to deploy scarce resources more appropriately.

Rappaport (1986) developed the Shareholder Value Analysis (SVA) model, which linked the company's cost of capital, financing structure and investment in fixed assets and net working capital to its share value. The major strengths of this model were its holistic approach and highlighting the interrelationships of factors contributing to shareholder returns. However, the SVA model did not indicate any specific internal measure of performance in order to maximise shareholder wealth.

Kaplan and Norton (1992:71) came up with the Balanced Scorecard concept that suggested a dashboard approach that monitors the four vital areas of performance, namely financial, customer, internal business process and innovation and growth. This approach made a valuable contribution to management thinking, because it linked the strategic objectives of companies to financial and non-financial measures. To its detriment, the Balanced Scorecard made no mention of a single, tangible indicator of financial performance.

The search for a single 'holy grail' financial measure of performance continues unabatedly, and the major contenders that have come to the fore are EVA, propagated by Stewart (1991) and Stern (1993), and CFROI by Madden (1999) EBM by Copeland and Dolgoff (2005).

## Economic Value Added (EVA)

EVA is based on the concept of residual income, and it calculates an economic profit that takes into account all the cost of capital, including an opportunity cost for equity. It sets the weighted average cost of capital (WACC) as the hurdle rate and asserts that shareholder value is only created if actual returns exceed the WACC (Stewart 1991:138).

$$\begin{aligned} \text{EVA} &= \text{Return spread} \times \text{IC} \\ &= (\text{ROIC} - \text{WACC}) \times \text{IC} \end{aligned}$$

Where

$$\begin{aligned} \text{IC} &= \text{Invested Capital (fixed assets plus net working capital)} \\ \text{ROIC (NOPAT/IC)} &= \text{Return on invested capital} \\ \text{NOPAT} &= \text{Net operating profit after tax} \end{aligned}$$

The main proponents of EVA, Stern Stewart Consulting, suggest a number of adjustments to the accounting statements (up to 160 in total) to correct for the 'conservative accounting bias' and to reflect 'an investor's perspective'. These adjustments include the capitalisation of goodwill and research and development costs previously written off in order to restate the operating profits and IC for the calculation of EVA.

The link between EVA and the value of the company is that, theoretically, the present value of all future EVAs represent the market value added (MVA) and the MVA plus IC result in the market value of the company as a whole.

$$\begin{aligned} \text{MVA} &= \text{PV(Future EVAs) and} \\ \text{V} &= \text{MVA} + \text{IC} \end{aligned}$$

Where

$$\text{V} = \text{Value of company as a whole.}$$

Hawawini and Viallet (1999:503) conclude that "management should maximise the entire stream of future EVAs their firm's invested capital is expected to generate in order to maximise their firm's MVA and create shareholder value." Copeland and Dolgoff (2005:289) pointed out that the valuation model of discounting free cash flows and the discounted EVA approach are mathematically identical and therefore yield the same results.

## Cash Flow Return On Investment (CFROI)

The CFROI discounts the net cash receipts (NCRs) denominated in real terms at a rate which is called 'the market discount rate'. The NCRs can be determined from the perspective of the company and from the point of view of the suppliers of the capital. These approaches are indicated in Table 1.

**Table 1: CFROI model definition of Net Cash Receipts**

Entity perspective	Financial flows
Net income	Interest expense
+ Depreciation expense	+ Debt principal repayment
+ Interest income	+ Dividends
= Gross cash flow	+ Share repurchases
- Capital expenditures	= Cash to suppliers of capital (A)
= Net Cash Receipts (NCRs)	
	New debt
	+ New equity
	= Cash from suppliers of capital (B)
	NCR = A - B

Source: Copeland & Dolgoff (2005:290)

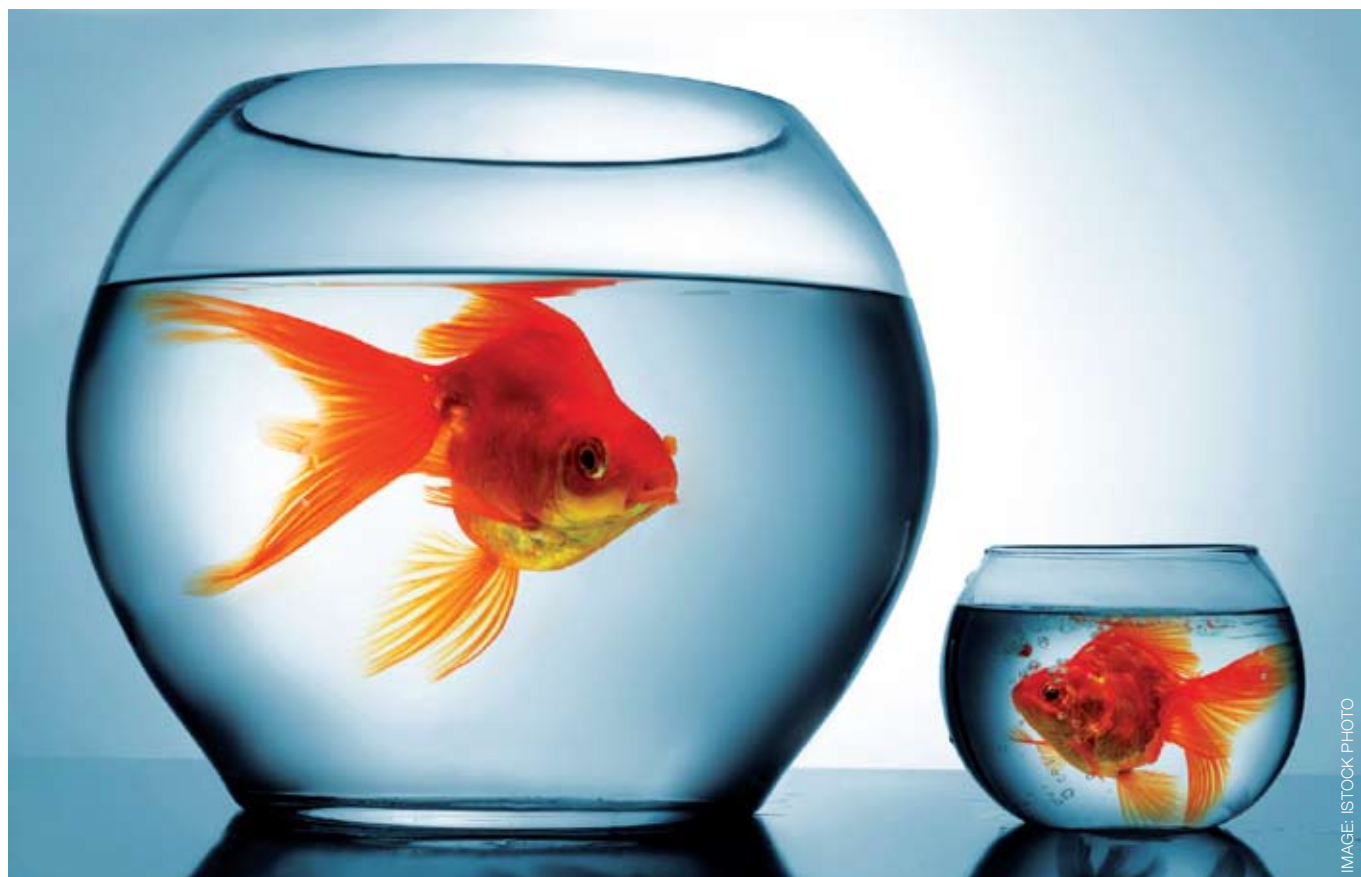


IMAGE: ISTOCK PHOTO

It must be noted that the NCRs above are inflation adjusted (real) cash flows and no indication is given about adjustments, such as the treatment of goodwill. Apart from these differences, the cash flows for the CFROI model are more or less the same as those required for the discounted free cash flow approach and the EVA approach.

The market discount rate is the internal rate of return that equates the present value of the aggregated NCRs of 1 438 (US listed) firms forecasted in real terms to the aggregated current market values (debt plus equity). The estimated market discount rate is then adjusted for the financial leverage and size of individual companies.

**Expectations-Based Management (Ebm)**

Copeland (2002:48) states that "...the biggest determinant of total return to shareholders is still meeting, beating or missing what the stock market expects a company to earn". This approach differs from the EVA perspective by viewing the cut-off rate as the rate expected by the market and not the WACC. In short, expectations theory postulates that value is only created for shareholders if actual returns are more than expected returns and not (necessarily) when actual returns are more than the WACC.

The EBM approach endorses the discounted (free) cash flow valuation model, which gives the same results as the EVA model used by Stern Stewart. What distinguishes EBM from EVA is the view that the impact of an action (or inaction) on a company's share price is determined by the change relative to the expectations and not relative to the cost of capital.

Copeland and Dolgoff (2005:292) define EBM on an annual basis as follows:

$$EBM = \text{Actual economic profit} - \text{Expected economic profit}$$

$$= [A(ROIC) - E(ROIC)] (IC) - [A(WACC) - E(WACC)] (IC) + [ROIC - WACC] [A(IC) - E(IC)]$$

Where

A	=	Actual
E	=	Expected

The three terms of the EBM formula indicate how a company can increase shareholder value by:

- earning more ROIC than expected; and/or
- lowering the WACC more than expected; and/or
- investing more than expected in projects that earn more than the cost of capital.

Table 2 indicates how EBM and EVA give different answers in evaluating the performance of different business units: *see table 2 overleaf.*

**Comparison of different approaches**

According to Copeland & Dolgoff (2005:306) claims made so far by proponents of the different approaches include that they:

- create shareholder wealth;
- are highly correlated with changes in shareholder wealth in the stock market;
- are multi-part systems that include valuation, annual performance measurement and operating value drivers; and
- should be the basis for determining top management compensation.

**Table 2: Different answers with EBM and EVA**

Business unit	Actual ROIC	Expected WACC	Expected ROIC	Capital	EVA	EBM
A	30%	10%	40%	5 000	1 000	-500
B	10%	15%	5%	10 000	-500	500
C	20%	10%	15%	8 000	800	400
D	20%	8%	40%	20 000	2 400	-4 000
Combined	19%	10%	27%	43 000	3 700	-3 600

Source: Source: Copeland & Dolgoff (2005:307)

Clearly, these claims cannot be valid for all the approaches discussed. An analysis of the key differences reveals the following.

#### Link to the total return to shareholders

On a company-by-company basis (using ungrouped data), the correlation (as measured by r-squared) of EVA or the growth in EVA relative to MVA was found to be 5% or less in tests done by Copeland and Dolgoff (2005:294). The initial claims of high correlations between EVA and MVA by Stern Stewart were based on grouped data and using averaged values. The correlation between CFROI and shareholder wealth is irrelevant, because the market rate is solved by determining the rate that discounts NCRs to current market prices. Therefore, there should per definition be a high correlation between CFROI and shareholder wealth. With the EBM approach, a correlation of between 40% and 50% was found between changes in expectations and market-adjusted returns on individual (ungrouped) companies.

#### User dependency on the vendor

Because of the complexity in determining the market discount rate, users of the CFROI approach need to rely heavily on consultants, as this exercise needs to be done periodically. Users of EVA also need some assistance in making the required adjustments to the financial statements, although their dependence is less than that of the CFROI users. Copeland and Dolgoff (2005:306) claim that EBM requires few if any adjustments, and therefore it is easier to maintain and operate independently.

#### Comparability and benchmarking

The more adjustments required to the financial statements in order to apply a certain approach, the more difficult it is to compare the results of one company to those of another. While it may be easy to do the adjustments within a company, it may be much more difficult to make adjustments within other companies for which only public information is available.

#### Simplicity

Due to the fact that simplicity is regarded as one of the characteristics of a good performance measurement system, the EBM approach would be favoured in this regard.

#### Business unit performance measurement

Each value-based system has a different approach to determine business unit performance. Failure to select the appropriate system could result in the serious misuse of resources. Table 2 indicates the different conclusions that would be reached when using either EVA or EBM. Copeland and Dolgoff (2005:307) claim that EVA measures performance incorrectly because actual results are not compared to expectations and, therefore, the resultant correction in the share price is not anticipated correctly. They are of the opinion that CFROI would make a similar mistake.

#### Ease of implementation

All three systems discussed require income statements and balance sheets at the business unit level. Furthermore, they also require upgrades in systems to identify and track value drivers. If an EVA system is already in place, it would be easy to upgrade to an EBM system, because almost all the data required is already available.

#### Level of acceptance and implementation to date

On a worldwide scale, it must be acknowledged that EVA has been marketed with great success by Stern Stewart Consulting and associates, and it has been implemented by most top companies. Current support for CFROI and EBM are lagging at this stage, but it must be borne in mind that EBM has been around for the shortest time and indications are that it is gaining ground.

#### Conclusion

Different approaches used for value management prompt different decisions with different results (and impact on shareholder value). An analysis of the three contemporary systems EVA, CFROI and EBM reveals some common ground as well as some significant differences. The purported superiority of any one technique in terms of maximising shareholder wealth cannot be proven with the data currently available.

More debate and critical thinking are required to answer tantalising questions such as whether shareholder wealth is maximised when a company achieves higher actual returns than its cost of capital or whether those returns must exceed the implied expected return according to the market price. Also, the impact of efforts trying to influence market expectations should be explored in order to present a more coherent picture of what really drives shareholder wealth.

There is undoubtedly a need for further unbiased research by independent agencies on the issues addressed. A level playing field, using similar time periods for similar companies and similar measures of shareholder wealth for all the systems being compared are prerequisites for credible results and meaningful conclusions. Without these, finding the most appropriate driver of shareholder wealth would prove to be as elusive as the proverbial end of the rainbow.

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