Economic Value Added: A General Prospect

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Abstract

EVA measures residual income; that is, it measures the difference between a firm’s cost of capital and return on capital. EVA is profit as economists think about profit. It differs from the conventional accounting-based approach in that it imposes charges for the use of all capital, including equity. The value of the firm equals capital employed, plus the present value of future EVAs. By motivating managers to increase future EVA, companies can promote value-creating behavior. When managers are evaluated and paid on the basis of EVA, they have stronger incentives to improve operational and capital efficiency, dispose of unprofitable business, achieve more optimal capital structures, and invest in value-creating projects. The aim of EVA is to provide management with a measure of their success in increasing shareholder's wealth: a better measure than profit of how much the company had made for shareholders. It is not of much direct use for valuation, but that is not what it is intended for. However, even in its intended role, the lack of risk adjustment for taking on debt means that it has an in-built bias in favour of high gearing. EVA is a trademark of Stern Stewart & Co.

In this conceptual article, we will learn: 1) The definition of EVA and 2) Why it is a superior measure of performance; 3) What are the importance of EVA and 4) Strength and weakness of EVA.

Key words: VBM, Shareholder value, ROI, WACC, NOPAT, Economic Profit
“Value creation is the responsibility of every employee, not just top managers and finance specialists.”

Introduction

Investors are currently demanding Shareholder value more strongly than ever. In the 1980s, shareholder activism reached unforeseen levels with the companies in the United States (Bacidore et al. 1997). Thereafter also investors in Europe have increased the pressure on companies to maximize shareholder value. Even in Finland the so-called Shareholder value – approach has gained grounds. This is due to e.g. abolishing the restrictions on foreign stock ownership. Foreign investors emphasize and demand focus on Shareholder value –issues. (Löyttyniemi 1996)

The financial theory has since long suggested that every company’s ultimate aim is to maximize the wealth of its shareholders. In the past, this ultimate aim has however been often partly ignored or at least misunderstood. Metrics like Return on investment and Earnings per share are used as the most important performance measures and even as a bonus base in a large number of companies, although they do not theoretically correlate with the Shareholder value creation very well. This has created need for Value Based Management (VBM) in Corporate.

The value-based management movement is based on two assumptions:

- The main aim of any business in a market economy is to maximize shareholder value and
- The second is that markets are too competitive for companies to create such value by accident.

The corporate culture processes, system should be planned in such a way that shareholder should get better returns. Corporate functions must be informed by value-based thinking—planning, capital allocation, operating budgets, performance measurement, incentive compensation, and corporate communication. Currently the most popular Value based measure is Economic Value Added, (EVA).
Review of Literature

Easton, P. Harris, T. and Ohlson, J (1992) observed that Economic Value Added (EVA) is an increasingly popular corporate performance measure one that is often used by companies not only for evaluating performance, but also as a basis for determining incentive pay. Like other performance measures, EVA attempts to cope with the basic tension that exists between the need to come up with a performance measure that is highly co-related with shareholders wealth, but at the same time somewhat less subject to the random fluctuations in stock prices. This is a difficult tension to resolve and it explains the relatively low correlation of all accounting based performance measures with stock returns at least on a year to year basis.

Stewart (III), and Bennett, G. (1994) observed that “EVA is a powerful new management tool that has gained growing international acceptance as the standard of corporate governance. It serves as the centerpiece of a completely integrated frame-work of financial management and incentive compensation.”

In essence, EVA is a way both to legitimize and to institutionalize the running of a business in accordance with basic microeconomics and corporate finance principles. The experience of a long list of adopting companies throughout the world strongly supports the notion that an EVA system, by providing such an integrated decision making framework, can refocus energies and redirect resources to create sustainable value for companies customers, employees, shareholders and for management.

Ray, Russ (2001) observed that the missing link between EVA and improved financials is actually productivity. EVA can be a powerful tool. When properly applied, it allows a firm to ascertain where it’s creating value and where it’s not. More specifically it allows a firm to identify where the return on its capital is outstripping the cost of that capital. For those areas of the firm where the former is indeed greater than the latter EVA analysis then allows the firm to concentrate on the firm’s productivity in order to maximize the value created of the firm. Finally, as investors buy more shares in the firm in order to have more claims on its increased value, they automatically bid up and eventually maximize the firms share price. And as any good capitalist knows, maximizing share price is the name of the game in a free
market economy. Thereafter marginal increases in value added can be attained by either decreasing the firms cost of capital or by increasing its productivity.

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O’Byrne used nine years of data (1985 -1993) for capitalized EVA (which is EVA divided by the cost of capital), net operating profit after tax (NOPAT), and free cash flows (FCFs) relative to market value divided by invested capital. His initial findings showed that FCF explained 0% of the change in the market value divided by the capital ratio, while NOPAT explained 33% and EVA-31%. It looked as if NOPAT and EVA had almost the same explanatory power. O’Byrne concluded that EVA, unlike NOPAT or other earnings measures, is systematically linked to the market value and that EVA is a powerful tool for understanding the investor expectations that are built into a company’s current share price.

Dodd and Chen used Stern Stewart 1000 database as a starting point and added some supplementary data for the ten years from 1983 to 1992. They set out to test the claim that EVA is a superior measure of shareholder value performance. Although they did find a correlation between share returns and EVA, it was not as high correlation of share returns and ROA. The correlation for the other accounting measures tested, namely EPS and ROE, was very low.

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EVA is a superior measure of shareholder value performance. Although they did find a correlation between share returns and EVA, it was not as high correlation of share returns and ROA. The correlation for the other accounting measures tested, namely EPS and ROE, was very low.

**Objective of the Study**
1. To study the difference between EVA and traditional approach of performance measurement.
2. To study importance of EVA.
3. To study strength and weakness of EVA.

**EVA : Defined**

EVA is a measure of profit. Not the accounting profit we are accustomed to seeing in a corporate income statement, but profit as economists define it. Both are measured net of operating expenses. They differ only in the treatment of capital costs. While income statements recognize only the interest paid to bankers and bondholders, EVA recognizes all capital costs, including the opportunity cost of shareholder funds.

The difference between accounting profit and economic profit can be seen in Figure 1 Accounting Profit (EBIT) Vs Economic Profit EVA).

On the left side is profit as it appears on the typical income statement, where EBIT is earnings before interest and tax (a popular term for pre-tax operating income), I is interest expense, T is income taxes, and IC is invested capital. Net income is simply operating income, with interest and taxes removed. Note that the only capital cost included in the profit measure is interest expense (the amount of debt multiplied by the interest rate).
EVA, or economic profit, also starts with EBIT. Income taxes are subtracted to produce net operating profit after tax, or NOPAT. But instead of subtracting interest, EVA charges for the use of all capital, including equity finance. While accounting profit charges only for the cost of debt, capital charges for the calculation of EVA equal the product of invested capital and the cost of capital (COC). The cost of capital, popularly known as the weighted-average cost of capital (WACC), is a function of the cost of debt and equity weighted for their relative proportions in the company’s capital structure. EVA is a measure of performance and a powerful way to promote shareholder value.

**EVA: A General Perspective**

EVA is the most misunderstood term among the practitioners of corporate finance. The proponents of EVA are presenting it as the wonder drug of the millennium in overcoming all corporate ills at one stroke and ultimately help in increasing the wealth of the shareholder, which is synonymous with the maximization of the firm value. The attractiveness of the EVA lies in its use of cash flow and cost of capital that are determinant of the value of the firm.

EVA is nothing but a new version of the age-old residual income concept recognized by economists since the 1770's. Both EVA and ‘residual income’ concepts are based on the principle that a firm creates wealth for its owners only if it generates surplus over the cost of the total invested capital. So what is new? Perhaps EVA could bring back the lost focus on ‘economic surplus’ from the current emphasis on accounting profit. The concept of residual income has not found a good sponsor until Stern Stewart and Company has adopted it and relaunched it with a brand new name of EVA.

Technically speaking EVA is nothing but the residual income after factoring the cost of capital into net operating profit after tax. But this is only the tip of the iceberg as will be seen in the next few sections. The paper examines EVA both as a measure of overall performance and a management philosophy that helps to improve the productivity of resources.

**Mathematically:**

\[
EVA = (\text{adjusted NOPAT} - \text{cost of capital}) \times \text{capital employed} \quad \text{-------(I)}
\]

Or

\[
EVA = (\text{Rate of return} - \text{cost of capital}) \times \text{capital} \quad \text{-------(II)} \text{ or}
\]
\[ EVA = (ROI - WACC) \times \text{CAPITAL EMPLOYED} \]  

(III)

Where:

Rate of Return = NOPAT/Capital

Capital = total assets minus non interest bearing debt, at the beginning of the year

Cost of capital = cost of equity x proportion of equity + cost of debt (1-tax rate) x proportion of debt in the capital.

The cost of capital is nothing but the weighted average cost of capital (WACC)

EVA as Performance Measure

Investors measure overall performance of a firm as a whole to decide whether to invest in the firm or to continue with the firm or to exit from it. In order to achieve goal congruence, managers’ compensation is often linked with the performance of the responsibility centers and also with firm-performance. Therefore selection of the right measure is critical to the success of a firm. To measure performance of a firm we need a simple method for correctly measuring value created/enhanced by it in a given time frame. All the current metrics trade off between the precision in measuring the value and its cost of measurement. In other words, each method takes into consideration the degree of complexities in quantifying the underlying measure. The more complex is the process, the more is the level of subjectivity and cost in measuring the performance of the firm. There is a continuous endeavor to develop a single measure that captures the overall performance, yet it is easy to calculate. Economic Value Added (EVA) (1) has been acclaimed to be such a measure (Tully, 1993). As defined by Stern Stewart Management Services of New York City, EVA is the difference between a company's net operating income after taxes and its cost of capital of both equity and debt (Stern Stewart, 1993).

Residual income is another approach to measuring an investment Corporate performance. Economic Value Added (EVA) is an adoption of residual income that has recently been adopted by many companies. Under EVA, companies often modify their accounting principles in various ways. For example funds used for research and development are often treated as investment rather than as expenses. under EVA. When residual income or EVA is
used to measure corporate performance, the objective is to maximize the total amount of residual income or EVA, not to maximize return on investment (ROI).

**Example:**
For the purpose of illustrating consider the following data for an investment center of a company.

<table>
<thead>
<tr>
<th>Basic Data for Performance Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average operating assets</td>
</tr>
<tr>
<td>Net operating income</td>
</tr>
<tr>
<td>Minimum required rate of return</td>
</tr>
</tbody>
</table>

The company has long had a policy of evaluating investment center managers based on ROI, but it is considering a switch to residual income. The controller of the company, who is in favor of the change to residual income, has provided the following table that shows how the performance of the division would be evaluated under each of the two methods:

<table>
<thead>
<tr>
<th>Alternative Performance Measures</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ROI</td>
<td>Residual income or EVA</td>
</tr>
<tr>
<td>Average operating assets (a)</td>
<td>Rs100,000</td>
<td>Rs100,000</td>
</tr>
<tr>
<td></td>
<td>===============</td>
<td>===============</td>
</tr>
<tr>
<td>Net operating income (b)</td>
<td>Rs20,000</td>
<td>Rs20,000</td>
</tr>
<tr>
<td>ROI, (b) ÷ (a)</td>
<td>20%</td>
<td>15,000</td>
</tr>
<tr>
<td>Minimum required return (15% $100,000)</td>
<td></td>
<td>Rs5,000</td>
</tr>
</tbody>
</table>

The reasoning underlying the residual income calculation is straightforward. The company is able to earn a rate of return of at 15% on its investments. Since the company has invested Rs100,000 in the division in the form of operating assets, the company should be able to earn at least Rs15,000 (15% × Rs100,000) on this investment. Since the division's net operating income is Rs20,000, the residual income above and beyond the minimum required
return is Rs5,000. If residual income is adopted as the performance measure to replace ROI, the performance would be evaluated based on the growth in residual income from year to year.

Comparison of Return on Investment (ROI) and Residual Income:
One of the primary reasons why Corporate would like to switch from ROI to residual income is to know how performance of new investment can be viewed under the two performance measurement schemes. The residual income approach encourages corporate s to make investments profitable but that would be rejected, who are evaluating by ROI formula.

To illustrate consider the data mentioned above and further suppose that the manager of the division is considering purchasing a machine. The machine would cost Rs 2,50,000 and is expected to generate additional operating income of Rs 4,500 a year. From the stand point of the company, this would be a good investment since it promises a rate of return of 18% [(Rs 4,5000/ Rs2,50,000) ×100], which is in excess of the company's minimum required rate of return of 15%. If the manager of the division is evaluated based on residual income, she would be in favor of the investment in the machine as shown below.

### Performance evaluated using residual income

<table>
<thead>
<tr>
<th></th>
<th>Present</th>
<th>New Project</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average operating assets</td>
<td>Rs10,00,000</td>
<td>Rs2,50,000</td>
<td>Rs12,50,000</td>
</tr>
<tr>
<td>Net operating income</td>
<td>Rs2,00,000</td>
<td>Rs45,000</td>
<td>Rs2,45,000</td>
</tr>
<tr>
<td>Minimum required return</td>
<td>1,50,000</td>
<td>37,500</td>
<td>1,87,500</td>
</tr>
<tr>
<td>Residual income</td>
<td>Rs50,000</td>
<td>Rs7,500</td>
<td>Rs57,500</td>
</tr>
</tbody>
</table>

Since the project would increase the residual income of the division, the manager would want to invest in the new machine.

Now suppose that the manager of the division is evaluated based on the return on investment (ROI) method. The effect of the machine on the division's ROI is computed as below:
Performance evaluated using residual income

<table>
<thead>
<tr>
<th></th>
<th>Present</th>
<th>New project</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average operating assets (a)</td>
<td>Rs10,00,000</td>
<td>Rs2,50,000</td>
<td>Rs1,250,000</td>
</tr>
<tr>
<td>Net operating income (b)</td>
<td>Rs 2,00,000</td>
<td>Rs 45,000</td>
<td>Rs 2,45,000</td>
</tr>
<tr>
<td>ROI, (b) ÷ (a)</td>
<td>20%</td>
<td>18%</td>
<td>19.6%</td>
</tr>
</tbody>
</table>

The new project reduces the ROI from 20% to 19.6%. This happens because the 18% rate of return on the new machine, while above the company's 15% minimum rate of return, is below the division's present ROI of 20%. Therefore the new machine would drag the division's ROI down even though it would be a good investment from the standpoint of the company as a whole. If the manager of the division is evaluated based on ROI, she would be reluctant to even propose such an investment.

Basically, a manager who is evaluated based on ROI will reject any project whose rate of return is below the division's current ROI even if the rate of return on the project is above the minimum rate of return for the entire company. In contrast, any project whose rate of return is above the minimum required rate of return of the company will result in an increase in residual income. Since it is in the best interest of the company as a whole to accept any project whose rate of return is above the minimum rate of return, managers who are evaluated on residual income will tend to make better decisions concerning investment projects than manager who are evaluated based on ROI.

Why EVA is a superior performance measurement tool?

Proponents of EVA argue that EVA is a superior measure as compared to other performance measures on four counts:

- it is nearer to the real cash flows of the business entity;
- it is easy to calculate and understand;
- it has a higher correlation to the market value of the firm and
- its application to employee compensation leads to the alignment of managerial interests with those of the shareholders, thus minimizing the supposedly dysfunctional behavior of the management.

The last two merits can be considered as a reflection of the first two. If EVA truly represents the real cash flows of a business entity and it is easy to calculate and understand, then it
automatically follows that it should be closely related to the market valuation and it should minimize the dysfunctional behavior of the management when used as an incentive measure. In other words, close relation to market valuation and convergence of managerial interests with shareholders interests is a vindication of EVA as a superior metric.

EVA as a performance measure looks into the efficacy of EVA both as an absolute measure in comparison with net income, residual income and similar measures as well as a ratio in relation with performance measures like ROE, ROA and Operating Profit Margin, which are commonly used by both managers and equity analysts alike. These measures are normally used internally by the management to evaluate employee performance, incentive calculation and investment decisions and externally by equity analysts to ascertain the performance and growth of the firm. Along with these measures valuation models like NPV, IRR, Payback period and Book rate of return are used both internally and externally by managers for investment decisions. The former measures are backward looking measures which take into account past and current performance and facilitates prediction of future performance, whereas latter measures are more forward looking and discount the expected future cash flow streams associated with a given investment or new investment to ascertain the economic viability of the same.

EVA is based on the principle that since a company’s management employs equity capital to earn a profit, it must pay for the use of this equity capital. As management consultant Peter Drucker once said, “Until a business returns a profit that is greater than its cost of capital, it operates at a loss... The enterprise still returns less to the economy than it devours in resources...Until then it does not create wealth; it destroys it” (Ehrbar 2). Including a cost for the use of equity capital sets EVA apart from more popular measures of bank performance, such as return on assets (ROA), return on equity (ROE) and the efficiency ratio, which do not consider the cost of equity capital employed.

The definition of EVA looks the same as that of residual income, a concept first discussed by Solomons (1965). However, proponents of EVA would argue that it is much more than a measure and that it can be adopted as a core business philosophy. They would describe EVA as a complete measure of operating performance as it balances the secondary measures (value
drivers) to maximise value. Ex ante, the accounting definition of EVA can be used for investment decision making. It is used in much the same way as NPV projects will be accepted if the present value of the future EVA is greater than the investment cost.

**Importance of EVA**

EVA is both a measure of value and also a measure of performance. The value of a business depends on investor’s expectations about the future profits of the enterprise. Stock prices track EVA far more closely than they track earnings per share or return on equity. A sustained increase in EVA will bring an increase in the market value of the company.

As a performance measure, Economic Value Added forces the organization to make the creation of shareholder value the number one priority. Under the EVA approach stiff charges are incurred for the use of capital. EVA focused companies concentrate on improving the net cash return on invested capital. The only way to increase EVA is through the actions and decisions of managers. People make the decisions and changes that create value. Companies that use EVA as their financial performance measure focus on operating efficiency. It forces assets to be closely managed. There are three tactics that can be used to increase EVA: earn more profit without using more capital, use less capital, and invest capital in high return projects.

EVA is an ideal Bonus base. EVA based bonuses to management can turn out to be quite big if management does well. This gives incentive to management to improve profitability and thus the bonuses will be only part of the discretionary value created, this kind of bonuses are good also for owners. A traditional managerial bonus plan awards a target bonus for meeting expectations. These expectations can be linked to share price or any other metric. The amount of bonus that can be earned by exceeding expectations is capped. The cap controls costs, but it provides no incentive to improve performance above a certain level. Subpar performance is punished by reducing the bonus, with no further disincentive once the bonus bottoms out at zero. The EVA bonus plan also includes a target bonus, plus a fixed percentage of excess EVA improvement (since EVA is measured in currency and can be positive or negative). The fixed percentage component results in an uncapped bonus level, on the upside or the downside.
EVA is highly accurate because it includes the cost of debt financing and equity financing. Since you can calculate EVA for private entities or for divisions within companies, you can use it as a motivational tool deep within your organization. Traditional managers understand that their companies need to control operating costs and succeed in the commercial markets. Today, companies also must compete in the capital markets by keeping their cost of capital low.

**Strengths and Weaknesses of EVA**

The map of metrics above helps us to understand that EVA it is one of several valid performance measures, each of which offer a different type of insight into a company. EVA's strengths include the following:

- Because it is a residual performance metric, it conveniently summarizes into a single statistic the value created above and beyond all financial obligations.
- By applying a capital charge, it corrects the key deficiency of earnings and earnings per share (EPS): they do not incorporate the balance sheet. EVA explicitly recognizes - by way of the capital charge - that capital is not free and, if growth is purchased with capital, EVA recognizes that the growth is not free and assigns a charge for the capital used to purchase the growth.
- As an operational metric, it helps managers clarify how they create value. Generally, they do it either by investing additional capital that produces returns above WACC, by reducing capital employed in a business, by improving returns by growing revenues or reducing expenses or by reducing the cost of capital.

**Now consider the weaknesses of EVA:**

- Unless fully loaded and all cash adjustments are made, EVA can be subject to accrual distortions. For example, because NOPAT is after depreciation and amortization, a company that does not reinvest capital to maintain its plant and equipment can improve its accrual bottom line simply by virtue of the declining D&A line. This sort of attempt at boosting EVA is known as harvesting the assets.
- It has the limitations of any single-period, historical metric: last year's EVA will not necessarily give you an insight into future performance. This can be especially true if
a company is in a turnaround situation or makes a large lump-sum investment, in which case, EVA will immediately suffer (due to the higher invested capital base) but the expected future period payoff will not show up as a benefit in the calculation.

- Because business-unit EVA calculations include the cost of capital, the prospect of a lower short-term EVA and the resultant bonus may discourage managers from investing in new projects.
- Because it relies on invested capital, it is more suitable for analyzing asset-intensive firms (those whose value comes largely from tangible assets on the balance sheet) that exhibit somewhat predictable growth trends. The best use of EVA tends to be in traditional and mature industries. It therefore has less relevance for firms that are valuable largely because of intangible, off-balance-sheet assets; EVA has shown limited success in high-tech and service-oriented companies.

**Conclusion**

Performance measurement systems that were successful in the past are becoming obsolete and in some cases are dysfunctional and obstructive to improvements. A dynamic and more competitive environment requires dynamic benchmarks to get a clear picture of whether the firm is a value generator or a value destroyer. The EVA based performance measurement system is the basis on which the company should take appropriate decisions related to the choice of strategy, capital allocation, merger & acquisitions, divesting business and goal setting.

Great business leaders, past and present, have always known about EVA without calling it that. EVA reveals to the rest of us the insights the best business managers have always had at a deep intuitive level. To make the most of this powerful tool for value creation, managers should know that EVA is much more than a measurement system. It’s also an instrument for changing managerial behavior. Implementing value-based principles requires acceptance and understanding among all managers, who not only must appreciate why value creation is so important but also must grasp the fundamental concepts underlying value creation. One of the great virtues of EVA is that it makes sound finance theory accessible, so that operating
managers, including those with no background or experience in accounting or finance, can incorporate insights from these disciplines into the way they run their businesses.

Bibliography

2. Bunea, S. 2007, L’analyse de la coherence des theories concernant la creation de valeur avec le concept de resultat global impose par l’IASB, *Analele Universitatii din Oradea*;
7. O’Byrne, S.F. 1996. EVA and market value. *Journal of Applied Corporate Finance*;

Websites:

www.iasb.uk