Chapter-2
CONCEPTUAL FRAMEWORKS OF ECONOMIC VALUE ADDED AND MARKET VALUE ADDED
## Chapter-2 – INDEX

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2.1 Introduction

EVA is an economic measurement tool that calculates operating performance of the company. EVA is defined as the changes in residual income along with the adjustments to the calculations in earnings and capital. EVA is a concept used to avoid problems caused by trade marking. According to Stewart (1991) EVA is a performance measurement tool reflecting the absolute amount of shareholder’s value creation through an effective investment decision. EVA is considered as superior performance measure as compared to operating profit, profit after finance items, EPS, ROI, and ROE. EVA is very simple and operatively practical. It improves profitability normally first through improved capital turnover. EVA is very suitable for bonus system. One of the major goals of EVA is to improve efficiency of managers towards their firms through an effective cost decision making.

The empirical studies highlight that there is no single accounting measure which explains the variability in the shareholders wealth (Chen and Dodd, 1997; Rogerson, 1997). Any financial measures used in assessing firm’s performance must be highly correlated with shareholders wealth and on the other hand should not be subjected to randomness inherent in it. Traditional performance measures such as NOPAT, EPS, ROI, ROE etc. have been criticized due to their inability to incorporate full cost of capital thereby accounting income is not a consistent predictor of firm value and cannot be used for measuring corporate performance. Value based management system has gained popularity in academic literature in last two decades. One such innovation in the field of internal and external performance measurement is EVA.
2.2 Economic Value Added and Market Value Added

Two measures of financial performance that are being applied increasingly in every financial and non-financial organization are market value added (MVA) and economic value added (EVA). The concept of EVA and MVA were developed in order to reflect corporate performance more accurately. Unlike traditional profitability measures, both MVA and EVA measures take into account the cost of equity capital.

Market value added and economic value added are calculations used to measure the value of a company. These matrices are useful for business owners because they highlight whether the firm is going good or performing badly. The matrices can also guide decision makers as they consider possible strategies for increasing the company's value.
2.3 Limitations of traditional method

Most of the accounting based measures such as Price: Earnings, Book Value, Returns on Equity, Return on Net worth etc. fail to provide a clear understanding of the major variables that drive value, except to some extent Returns on Invested Capital. These methods are easily influenced by the smart and perhaps mischievous management through window dressings. They also do not incorporate risk or time value of money also and do not help investors understand the intricate process of value creation. In addition, these traditional measures use, for most part, historical data to measure current performance. Ideally, one would like to measure how current decisions will affect the firm’s future performance.
2.4 Value Added:

EVA and MVA are the two measures of Value Added in corporate reality. Modern economy suggests one objective that is Value Added also known as Economic Profit.

“Value added (VA) is the difference between the value produced by a firm/project and all costs associated with the production of that value, including all opportunity costs.”

Thus, a firm that chooses VA as its corporate objective strives to create more value for its owners (owners of Equity and Debt) than any comparable investments.
2.5 Economic Value Added (EVA)

Economic Value Added (EVA) is a revised version of Residual Income (RI) with a difference the way, the economic profit and the economic capital is calculated. The economic value added is a good indicator both for the retrospective evaluation of performances (the economic value added for the historical period) and also for prospective evaluation of performances (the economic value added for the future period).

EVA is a registered trademark developed by Stern Stewart and Co. Economic Value Added or EVA is an estimate of true economic profit which is made after making adjustments to GAAP accounting, including deduction of the opportunity cost of equity capital. By taking all capital costs into account, including the cost of equity, EVA shows the quantum of financial wealth a business has created or destroyed in a reporting period. In other words, EVA is profit in the way that shareholders define it. If the shareholders expect, say, a 10% return on their investment, they earn money only to the extent that their share of the NOPAT exceeds 10% of equity capital. The idea behind EVA is that shareholder must earn a return that compensates the risks taken by him.

Definition of EVA

EVA was invented by Stern Stewart and Co. launched EVA in 1989. EVA measures residual income: **Firm’s Cost of Capital – Return on Capital.** EVA is a tool that focuses on maximizing shareholder wealth.

EVA really caught fire in the 1990s. In Big corporations, including Coca-Cola, GE and AT&T, employ EVA internally to measure wealth creation performance. In turn, investors and analysts are now scrutinizing company EVA just as in the past they observed EPS and P/E ratios.
Calculation of EVA

Mathematically, EVA can be estimated focusing both, on Management of Capital as well as the Management of Profits.

EVA - (As a measure of value creation through Management of Capital)

\[
EVA = NOPAT - (WACC \times \text{Total Capital Employed})
\]
The use of this formula will produce either a positive or negative EVA number. A positive EVA reflects that the company is increasing its value to its shareholders, whereas a negative EVA reflects that it is diminishing its value to its shareholders. 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. Including a cost for the use of equity capital sets EVA apart from more popular measures of company’s performance, such as return on assets (ROA), return on equity (ROE) and

<table>
<thead>
<tr>
<th>Analysis Tools</th>
<th>Calculation</th>
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<tr>
<td>NOPAT (Net Operating Profit After Tax)</td>
<td>Net operating profit after tax as per P&amp;L a/c</td>
</tr>
<tr>
<td></td>
<td><strong>Minus</strong></td>
</tr>
<tr>
<td></td>
<td>Interest on long term borrowings adjusted for tax</td>
</tr>
<tr>
<td>WACC (Weighted Average Cost of Capital)</td>
<td>E/CE<em>Ke + P/CE</em>Kp + LTB/CE*Kd</td>
</tr>
<tr>
<td></td>
<td>Where,</td>
</tr>
<tr>
<td></td>
<td>E= Equity Share Capital</td>
</tr>
<tr>
<td></td>
<td>P= Preference Share Capital</td>
</tr>
<tr>
<td></td>
<td>LTB= Long Term Borrowings</td>
</tr>
<tr>
<td>Total Capital Employed</td>
<td>Equity Share Capital + Preference Share Capital + Long Term Borrowings</td>
</tr>
<tr>
<td>Ke (Cost of Equity)</td>
<td>Ke= Rf + β( Rm - Rf )</td>
</tr>
<tr>
<td></td>
<td>Rf = Risk Free Rate of Return (365 days t-bills rate- 4.6)</td>
</tr>
<tr>
<td></td>
<td>Rm = 5 years market monthly return of NIFTY</td>
</tr>
<tr>
<td>Kd (Cost of Debt)</td>
<td>Interest on long term borrowings * (1 - Tax Rate) / Long Term Borrowings *100</td>
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The use of this formula will produce either a positive or negative EVA number. A positive EVA reflects that the company is increasing its value to its shareholders, whereas a negative EVA reflects that it is diminishing its value to its shareholders. 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. Including a cost for the use of equity capital sets EVA apart from more popular measures of company’s 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. As a result, these measures may suggest a company is performing well, when in fact it may be diminishing its value to its shareholders.
2.6 Market Value Added (MVA)

Stewart calls that difference between the company's market value and book value as Market Value Added (MVA). EVA is an internal measure of performance that determines MVA which is an external measure of firm's performance. EVA is known as the best value measurement tool for the shareholders as it has strong relation with MVA. MVA shows the additional value added to the book value of the invested capital. If MVA is positive, the firm has added value. If it is negative, the firm has destroyed value. The amount of value added needs to be greater than the firm's investors could have achieved investing in the market portfolio, adjusted for the leverage (beta coefficient) of the firm relative to the market.

MVA is not a performance metric like EVA, but instead is a wealth metric; measuring the level of value a company has accumulated over time. As a company performs well over time, it will retain earnings. This will improve the book value of the company's shares, and investors will likely bid up the prices of those shares in expectation of future earnings, causing the company's market value to rise. As this occurs, the difference between the company's market value and the capital contributed by investors (MVA) represents the excess price tag that market assigns to the company as a result of its past operating successes.

Definition of MVA

With a view to measure shareholder's value, Stewart invented the term Market Value Added (MVA). MVA is defined as, “the difference between market value of invested capital and book value of invested capital of a company at a given period of time”. Market value of invested capital refers to the market value of equity capital and debt capital, but the market value of debt is not easily available as debts are not generally traded.

Thus, the definition of MVA can be stated as market capitalization less net worth.
Calculation of MVA

\[
MVA = \text{Market Capitalization} - \text{Net Worth}
\]

\[
\begin{align*}
\text{Surplus} & \quad \text{Closing Share price} \quad \text{Equity Capital + Reserves and} \\
\text{Expense} & \quad \times \quad \text{Number of Outstanding Shares} \quad \text{Accumulated Losses and Misc.}
\end{align*}
\]

The use of this formula will produce either a positive or negative MVA number. A high

MVA indicates the company has created substantial wealth for the shareholders. A negative MVA means that the value of management’s actions and investments are less than the value of the capital contributed to the company by the capital market (or that wealth and value have been destroyed).

Thus, MVA denotes the extent to which the market has added value to the net worth of a company. An increase in MVA infers maximization of shareholder’s wealth. This is because shareholders want to see appreciation in stock prices. MVA can improve if market capitalization increases for the same level of net worth or if net worth of a company decreases.
2.7 Link between EVA and MVA

Some researchers have investigated the link between EVA and MVA as follows:

![Diagram showing the relationship between EVA and MVA]

(Source: Adapted from Fatemi et al. 2003:14)

Fatemi, ET al. (2003:14) has found that when Economic Value Added is achieved at the expense of Market Value Added (the “problem children” group), there is a penalty in the compensation for top management.

They categorized companies according to their ability to generate EVA and MVA. Companies with high EVA and MVA are called “Winners”, companies with high EVA and low MVA are called “Problem Children”, companies with high MVA and low EVA are “Holders of Real Option” and companies with low EVA and MVA are typified as “Losers”.

<table>
<thead>
<tr>
<th>EVA</th>
<th>MVA</th>
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<tbody>
<tr>
<td>High</td>
<td>“Winners”</td>
</tr>
<tr>
<td>Low</td>
<td>“Losers”</td>
</tr>
<tr>
<td>Low</td>
<td>“Problem Children”</td>
</tr>
<tr>
<td>High</td>
<td>“Holders of Real Option”</td>
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2.8 Implication of EVA and MVA

EVA can be thought of as the incremental contribution to the firm’s operations to the creation of MVA. MVA is the present value of all expected future EVA. Firms that constantly earn return in excess of their cost of capital will have positive EVA, thereby enhancing the MVA of the enterprise and vice versa.

One important implication of EVA and MVA concepts is that growth in earning does not necessarily add to the value of enterprise (MVA) unless it is achieved by making (and managing) investments such that they earn a return in excess of the cost of capital.

Another implication is that increasing the rate of return on investment will not necessarily increase MVA because it is necessary to link the return earned with the market required rate of return (WACC).
2.9 Advantages of EVA and MVA as Performance Measurement Tools

1) Forecasting of Economic / Market Value Added for each year shows how much value will be added to the capital employed each year.

2) These methods can clearly connect capital budgeting and strategic investment decisions with a methodology for subsequent evaluation of actual performance.

3) Forecasting of Economic / Market Value Added amounts automatically produces a series of targets for management to achieve in order to justify the valuation.

4) It can be readily communicated to and understood by operational management.

5) Economic Value Added creates a meaningful performance measurement which can be used to judge subsequent performance.

6) For a project to be favorably considered, market value added must be positive. On the other hand free cash flow may fluctuate from positive to negative and back again over the life of the project.

7) Economic and Market Value Added focuses management’s attention on the fundamental three ways to create value. These are:
   - Improve profits without making a further investment in additional capital.
   - Only invest in projects where earnings exceed the cost of capital.
   - Disinvestment from projects where the savings on the capital cost exceeds earnings foregone.
2.10 Limitations of EVA and MVA

Limitations of EVA

1) It is based on financial accounting methods that can be manipulated.

2) EVA is biased against new assets

3) EVA is in favor of large companies

4) EVA favors more debt compared to equity

5) Implementation includes significant cost

6) EVA does not study business drivers like consumer satisfaction or learning and growth.

Limitations of MVA

1) It does not take into account the opportunity cost of the invested capital.

2) It does not take into account the interim cash returns to shareholders.

3) MVA cannot be calculated at divisional (SBUs) level.
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