CHAPTER - 2

STUDY OF PREVIOUSE LITERATURE REGARDING EVA AND SHAREHOLDERS WEALTH

This chapter contains review of earlier literature in the area of EVA techniques used in financial reports.

The researcher has used different recourses for compiling this chapter.

1. From Stern Stewart and Co. opinions about EVA;
2. From EVA reports that has been published by different companies in different countries;
3. From articles published in journals;
4. From specific books on the subject, and;
5. From websites related to EVA in internet.

This chapter contains the following aspects of review of relevant literature studied from different angles.

1. Review of generalities about EVA containing:

2. Introduction, Meaning and Definition of EVA, EVA and Residual Income, Economic Profit versus Accounting Profit, Computation of EVA, Elements of EVA’s formula, Measurement of EVA, Adjustments for making EVA and Strategies for increasing EVA,

3. Review of particulars of EVA:
4. EVA and traditional performance measures, Implementing of EVA, Advantages of EVA, Limitations of EVA, and Application of EVA,

5. Review of capabilities of EVA:

6. EVA as performance measurement and reward system, EVA and management system, EVA and Net Present Value (NPV). Relationship between EVA and Market Value Added (MVA), EVA and shareholder value, Wealth creation, and finally EVA and market value of firms.

2.1 REVIEW OF GENERALITIES ABOUT EVA CONTAINING

2.1.1 INTRODUCTION

Historically, Performance Measurement (PM) systems was developed as a means of monitoring and maintaining organizational control, which is the process of ensuring that an organization pursues strategies that lead to the achievement of overall goals and objectives. PM plays a vital role in every organization as it is often viewed as a forward-looking system of measurements that assist managers to predict the company's economic performance and spot the need for changes in operations. In addition, PM can provide managers, supervisors and operators with information required for making daily judgments and decisions. PM is increasingly used by organizations, as it enables them to ensure that they are achieving continuous improvements in their
operations in order to sustain a competitive edge, increase market share
price and increase profit in order to increase the shareholders wealth.
There are many kinds of performance measurement systems and tools.
But which kind of these systems or tools would be useful is related to the
organizational goals.

A sea change in the organizational goals from the earlier socio-
economic issues to the newly minted shareholders’ value has led to a
revolutionary change in the performance measurement criteria of
corporate entities.

Indeed maximization shareholder value has become the new
corporate paradigm. Although managers and researchers have
traditionally recognized shareholder wealth maximization as the ultimate
corporate goal, the maxim has gained new dimension in recent years. The
concept of Economic Value Added (EVA) as a performance measurement
tool coined and registered by Stern, Stewart &Co, New York. EVA is a
residual income that subtracts the cost of capital from the operating profits
generated by a business.

Today a number of large corporations are using EVA, as a
measurement of wealth creation. But EVA is not just a performance
measure of shareholder’s wealth creation. If properly implemented, EVA
is much more. It is an integrated performance measurement,
management and reward system, encompassing the full range of

business decision-making and moving shareholder accountability to the same level as decision-rights. EVA can have powerful effects on IT management. It keeps everyone focused on making the maximum benefit out of the capital asset base. When put in to practices it becomes a part of the blood of every member of the organization. Above all, it is the centerpieces of business literacy, for this reason, corporations throughout the world now use EVA to remake governance from within.

Measuring EVA is critical. Effective EVA implementations require a formal compensation plan that puts bonus money at risk. Depending on the actual EVA target and company performance, employees can end up with significantly larger bonuses or no bonus at all, if EVA falls below target.

Stern Stewart argues that fundamental EVA-driven performance improvements occur only when employees behave as if the companies’ money they spend is their own. And managers are responsible for meeting targets of company when they know cost of capital charge is taken against project returns. Since this sudden shift in the mind-set, has made employees thinking like owners.

2.1.2 MEANING AND DEFINITION OF EVA

Several Meaning and definitions about EVA have been given by various texts
1. EVA is a series of periodic reports from Stern Stewart & Co., to cover issues of valuation, organizational design, decision-making, remuneration, and corporate governance. It assists in understanding how actions affect value. It is believed that all stakeholders benefit from the creation of value through innovation, growth and efficiency;

2. EVA is defined as the excess of a company’s after tax operating profits over the required minimum rate of return investors could get by investing in securities of comparable risk;

3. EVA is more than just performance measurement system. It is also marketed as a motivational, compensation-based management system that facilitates economic activity and accountability at all levels in the firm;

4. EVA is an operational measure that differs from conventional earnings measures in two ways. First, it explicitly charges for the use of capital (residual income measure). Secondly, it adjusts reported earnings to minimize accounting distortions and to better match the timing of revenue and expense recognition. An advantage of EVA is that it is dollar-based. As such, wealth maximization correlates with EVA maximization. A positive EVA indicates that a company is generating economic profits; a negative EVA indicates that it is not;
5. Economic Value Added (EVA) is an indicator of the market value of service center's owner's equity, a measure especially important to closely held companies, which do not have the benefit of a published stock price. For publicly traded companies, EVA correlates very closely with stock price;

6. EVA has been put to use for management performance evaluation, for improving scarce capital allocations, and for valuation of Target Company at the time of acquisition;

7. EVA is measured by comparing Return on Capital Employed (A.T.) with Cost- of-Capital, also called Return Spread. A positive Return Spread indicates that earning is more than cost-of-capital – there by creating wealth for owners or stockholders. A negative Return Spread means earning is less than cost-of-capital – thus reducing the wealth of owners and stockholders. For instance, if Return on Capital Employed (A.T.) is 18% and Cost of Capital is 15%, and then Return Spread is +3%. If Capital Employed is Rs.1, 000,000, then EVA is Positive Rs30, 000. The market value of owners’ stock increased too by Rs30, 000 (= Rs1, 000,000 x .03). By contrast, if Return on Capital Employed (A.T.) is 12% and Cost-of-Capital is 15%, and then Return Spread is -3%. EVA is a negative Rs30, 000. The market value of owners’ equity value too declined by Rs30, 000. Whether the company is publicly traded or closely held, managing to increase EVA is
managing to increase the market value of company's equity. Over 300 multi-national corporations employ EVA as a management and executive compensation system;

8. EVA is an estimate of a firm’s true economic profit that differs from accounting profits in the following three ways. First, EVA integrates operating efficiency and asset management into one measure that can be easily understood by operating personnel. Second, EVA is charged for capital at a rate that compensates investors for providing the capital needed for operations. Finally, EVA adjusts reported accounting results in order to eliminate distortions;

9. EVA is the most accurate measure of corporate performance over any given period. EVA is being called as "today's hottest financial idea," and EVA is a measure of "total factor productivity" whose growing popularity reflects the new demands of the information age;

10. EVA is an estimate of true economic profit and a tool that focuses on maximizing shareholders wealth. Companies' best utilize EVA as a comprehensive management tool. EVA has the strategic importance of focusing management and employees on the company’s primary goal of maximizing shareholder value. With this goal in mind, EVA can be used tactically in a number of ways including: shareholder reporting, financial benchmarking,
management decision-making tool, and foundation for incentive compensation plans;

11. EVA is a measure of rupees surplus value, not the percentage difference in returns; it is closest in both theory and construct to the net present value of a project in capital budgeting;

12. EVA is a fundamental measure of Return on Capital;

13. Adopting EVA philosophy forces a company to find ingenious ways to do more with less capital (Tully, 1993). This does not mean EVA concept retards growth. It only suggests that so long as a company is earning a return on its investment in excess of the cost of investment, there is no limit to growth. It is only when the earning is insufficient to meet the cost of funds tied up, there arises a need to unlock the fund and thereby avoid or minimize bad or uneconomic investment;

14. EVA is not merely a financial computation reported at the end of the year but is a part of the fully integrated management system. EVA, the value based benchmark used for judging the financial performance of any business entity may be literally defined as the quantum of economic value generated by a company in excess of its cost of capital. It essentially seeks to measure a company’s actual rate of return as against the required rate of return. It is a way to measure a corporate real profitability recognizing the fact

\[ \text{Tully, Shawn, 1993, The Real Key to Creating Wealth, Fortune, 38-50.} \]
that the capital employed in any business has a cost – irrespective of the general belief that equity has no cost. Thus EVA is nothing but accounting for the cost of capital and determining the sufficiency or insufficiency of earnings generated by a firm to cover the cost of capital, i.e., whether a firm is a value generator (or value creator) or a value destroyer;

15. EVA, developed by New York City-based consultancy Stern Stewart, is a riff off this distinction. EVA equals the net operating profit minus any applicable capital charges. Net profit after taxes, as defined in accounting terms, considers equity capital as if it were available without cost, since net profit doesn't account for a charge for equity capital. Yet equity capital isn't actually free. The cost of equity capital that EVA addresses is determined by the future rate of return an investor would require before investing in the company's stock. EVA accounts for that charge. Stern Stewart maintains that continuously increasing EVA will ultimately generate higher shareholder value;

16. Economic Value Added or EVA is an alternative single-period performance measure that eliminates this incentive for under investment. EVA is defined as net cash flow in a period less a capital charge equal to the cost of capital. This "residual income," as it used to be known in the accounting literature, is total of net cash flow less the total charges for capital used in the business.
2.1.3 EVA AND RESIDUAL INCOME (RI)

EVA is the leading example of a new class of metrics that attempt to measure an underlying concept called Residual Income (RI), which for the first time is being recognized by economist. The concept of residual income is based on the create wealth for owners. A firm that wants to create wealth for its owners, it must earn more on its total invested capital than the cost of the capital. Traditional accounting net income measures “profits” net of interest expense on debt capital, whereas residual income measures “profits” net of the full cost of both debt and equity capital. Thus residual income is equal to traditional accounting net income minus a charge for the cost of equity capital.

Because of EVA’s adjustments, which will be studied subsequently, its considered as a better measure than Residual Income that enhances comparability and also reduces distortions of managerial incentives introduced by standard GAAP accounting, as, certain adjustments remove or reduce managers, discretion in computing EVA. When the difference between EVA and Residual Income is relatively small, it suggests that the net effect accounting adjustments is not large on an average.

2.1.4 ECONOMIC PROFIT VERSUS ACCOUNTING PROFIT

Stern (1990) observed that Economic Value Added is the financial performance measure that comes closer than any other to capture the true economic profit of an enterprise.
Economic Profit = Total revenues from capital – Cost of capital

The basic idea of this criterion is to find, in microeconomics, where it is said that the main goal of a company is maximization of profit. However, it does not mean book profit (the difference between revenues and costs) but economical profit. The difference between economical and book profit is, economical profit. It is the difference between revenues and economical costs, which includes book costs and opportunity costs. Opportunity costs are presented by the amount of money lost by not investing sources (like capital, labour, and so on) to the best alternative use. Opportunity costs are in reality represented mainly by interests from equity capital including risk reward and sometimes lost wages too. In short:

Book profit = Revenues – Costs

This leads to the conclusion that economical profit appears when its amount is higher than “normal” profit derived from average cost of capital invested both by creditors (cost interests) and owners–shareholders (opportunity costs). This is the basic idea of new measure, EVA.

2.1.5 COMPUTATION OF EVA

Operationally defined, EVA is the difference between Net Operation Profits After Taxes (NOPAT) and capital charge i.e., Cost of net Operating of Capital Employed (COCE) or the product of capital employed
with the difference between the Return on Capital Employed (ROCE) and the Cost of Capital Employed (COCE) i.e.,
\[ EVA = \text{Net Operating Profits after Taxes (NOPAT)} - \text{Capital Charge (WACC} \times \text{CE)} \]

Where:
\[ \text{WACC} = \text{Weighted Average Cost of Capital} \]
\[ \text{CE} = \text{Capital Employed} \]
\[ \text{Capital Employed} = \text{Dept} + \text{Equity} \]

Or:
\[ EVA = \text{NOPAT} - (\text{Cost of Equity Capital} + \text{Cost of Dept Capital}) \]

2.1.6 ELEMENTS OF EVA’S FORMULA

As mentioned above the formula of EVA is:
\[ EVA = \text{Net Operating Profits after Taxes (NOPAT)} - \text{Capital Charge (WACC} \times \text{CE}) \]

Or:
\[ EVA = \text{NOPAT} - (\text{Cost of Equity Capital} + \text{Cost of Dept Capital}) \]

The real profit of a company is the profit after deducting the capital costs. This profit figure is often called Economic Value Added, EVA. (Economic Profit or Residual Income).

EVA simply is:
\[ EVA = \text{Sales} - (\text{Operating expenses (material, wages, depreciation, taxes)} + \text{Capital costs (WACC} \times \text{invested capital)}) \]
The components of EVA formula are:

- Net Operation Profit after Tax (NOPAT)
- Weighted Average Cost of Capital (WACC)
- Capital Employment (CE)
- Cost of Capital that is including of:
  - Cost of Debt Capital
  - Cost of Equity Capital

2.1.6.1 NOPAT

It refers to quantum of net operation profit remained in the business after the payment taxes but before the interest. Addition and subtraction of non-operating income and expenses to the net profit figure and making certain other adjustments for turning accounting profits into economic profits is being also advocated.

However, the actual number of adjustments would depend on prevailing GAAP of a country. In order to avoid complexity in the calculation of NOPAT, four common adjustments are to be made has been suggested.

1. Adjustments for deferred Tax Reserve;
2. Last-in-First-Out (LIFO) Reserve;
3. Goodwill Amortization and;
These items are called Equity Equivalence. Equity Equivalents are added to invested capital and periodic change is taken to NOPAT. These adjustments make NOPAT, a realistic measure of yield generated for investors for recurring business activities. It is believed that these adjustments would truly convert accounting profit to economic profit.

\[ \text{NOPAT} = \text{PBIT (nnrt)} \times (1-T) \]

\(\text{PBIT (nnrt)} = \text{Profit before Interest and Taxes (net of non-recurring transactions)}\)

\(= \text{Profit After Tax (PAT)} + \text{Provision for Tax} + \text{Interest Expenses} + \text{Lease Rent Extraordinary Income} + \text{Extraordinary Expenses.}\)

\(T=\text{Effective Tax Rate (provision for Tax / PBT).}\)

2.1.6.2 WACC

WACC is the weighted average of the cost of debt (ki), cost of equity (ke) and cost of preference capital (kp), if any, with weights equivalent to the proportion of each in the total capital, i.e.

\[ \text{WACC} = \frac{(ke \times s) + (ki \times b) + (kp \times p)}{v} \]

Where:

ke = Cost of equity

ki = Effective cost of debt i.e., \(kd(1-t)\)

kd = Unadjusted cost of debt,

kp = Cost of preference capital,

v = Total value of business,
s = Value of equity capital,

b = Value of debts,

p = Value of preference capital.

2.1.6.2.1 Effective Cost of Debt (Ki)

Effective cost of debt refers to the average rate of interest that company pays for its debt obligation i.e., a company's effective debt cost is taken by measuring interest paid against total borrowing and then adjusting it for taxes.

2.1.6.2.2 Cost of Preference Capital (Kp) is the discount rate that equates the present value of after tax interest payment, cash outflows to current market value of the preference share capital.

2.1.6.2.3 Cost of Equity (Ke)

Cost of equity is an opportunity cost equal to the total return that an investor in a company’s equity could expect to earn from alternative investment of comparable risk. Cost of equity is not an explicit cost like cost of debt. The dividend-based approach or earning-based approach of finding out cost of equity is not a valid way of calculating the return expected by equity shareholders. These approaches only measure the explicit cost of servicing equity. But the true measure of equity cost can be calculated opting for a number of theories such as:

1. Capital Asset Pricing Model (CAPM);
2. Bond Yield Plus Risk Premium Approach;
3. Earning Price (E / P) Approach;
4. Realized Yield Approach;
5. Dividend Capitalization Approach.

In this current study, Capital Asset Pricing Model (CAPM) is being used for calculate cost of equity. Under CAPM cost of equity capital is expressed as:

\[ Ke = rf + \beta (rm - rf) \]

2.1.6.2.4 rf

Represents the most secure return that can be achieved and in India context, it represents current yield available in long-term government bonds.

2.1.6.2.5 \( \beta \)

Refers to the sensitivity of the security returns to changes in the market return.

The suitability of a particular approach to calculation of cost of equity capital differs from country to country depending on their distinct disclosure and reporting practices and other environment conditions.

As mentioned above, in the India context, it represents current yield available in long-term government bonds. In the next section Beta has been explained in detail.
2.1.6.3 Capital Employment (CE)

It is the next element required for calculating EVA and can be calculated through the assets side or the liabilities side of a balance sheet.

From the Assets Side of the Balance Sheet:

\[
CE = \text{Current Assets} - \text{Non interest bearing current liabilities} + \text{Net Fixed Assets}
\]

or

\[
CE = \text{Net Working Capital} + \text{Net Fixed Assets}
\]

From the Liability Side of the Balance Sheet:

\[
CE = \text{Interest bearing debt (short term as well as long term)} + \text{Net worth less any non operating assets}
\]

Capital employed or Invested capital refers to total assets (net of revaluation) net of non-interest bearing liabilities. From an operating perspective, invested capital can be defined as Net Fixed Assets, plus investments plus Net Current Assets. Net Current Assets denote current assets net of Non-Interest Bearing Current Liabilities (NIBCLS). From a financing perspective, the same can be defined as Net Worth plus total borrowings. Total borrowings denote all interest bearing debts. It is need to mention that adjustments for four Equity Equivalents mentioned above should be made. The adjustments for Equity Equivalents are intended to arrive at the economic value of invested capital. Equity Equivalents eliminate accounting distortions. Net worth is defined as paid up share capital plus reserves and surplus (net of revaluation reserves) less
miscellaneous expenditure less accumulated losses, if any. One may argue that this method of calculating invested capital is not free of depreciation distortions. Since net block of depreciable assets is considered, different corporate depreciation policy would affect the invested capital and hence EVA. Stewart (1991) tackles it by prescribing a uniform method of charging depreciation. He mentions that a straight-line depreciation would minimize the distortions. Such adjusted invested capital (after adjusting for Equity Equivalents and depreciation) would be called economic capital. However, invested capital for the purpose of the study is defined as follows:

Invested Capital = Net Worth + Total Borrowings

Where:

Net Worth = Share Capital + Reserves and Surplus – Revaluation Reserve - Accumulated Losses - Miscellaneous Expenditure

Total Borrowings = long term Interests bearing Debt + Short term Interest bearing Debt

The pertinent questions asked are whether the capital employed is taken at its opening value at the beginning of the year or the year-end value or the average of the two? Also should the capital employed be taken at the book value or the market value? The answer to the first question is to use the beginning of the year capital employed for calculating EVA as this was the capital available to the management to
earn the returns on and further, taking the beginning of the year capital employed helps in evaluating capital budgeting decisions.

As for whether to take the capital employed at book value or market value, it is prudent to use the book value figure in the EVA calculations, as this is the amount that has been entrusted to the management to employ in the business.

2.1.6.4 Cost of Capital

The term ‘Cost of Capital’ means the cost of long-term funds of a company. It is the multiple of ‘Capital Employed’ and Weighted Average Rate of Debt Capital, Cost of Equity Capital and Cost of Preference Share Capital. This is cost of capital or is known as Weighted Average Cost of Capital (WACC). WACC is post tax. Capital Employed represents the total of Debt Capital, Equity Capital and Preference Share Capital. The mix of Debt and Equity Capital has a vital role in the cost of capital. Equity Capital is generally more costly than Debt Capital. Use of Debt Capital increases interest payment risk, reduces WACC and increase Equity Shareholder’s return. Optimum Debt Equity mix should always be aimed at considering the trade-off in between risk and return.

2.1.6.4.1 Cost of Debt Capital

Cost of Debt Capital is the discount rate that equates the present value of after tax interest payment cash outflows, to the current market value of the Debt Capital. Due to the tax-benefit on interest payment on
debt capital, Cost of Debt is, generally, lower than the Cost of Equity Capital. That is why; many companies go for capital gearing through Debt Capital in order to increase the earning of their equity shareholders. In case of banking companies subordinated Debts is considered as debt but not deposits. Because unlike subordinated debt it is not contractual and repayable on demand. That is, debts raised for funding capital requirement should only be considered as debt. Debts/ Bonds/ Time deposits raised by financial institutions for funding their landings should not be considered as debt capital.

2.1.6.4.2 Cost of Equity Capital

Cost of Equity Capital is the market expected rate of return. Equity capital and accumulated reserves and surpluses that are free to equity shareholders carry the same cost. Because the reserves and surplus are created out of appropriation of profit, that is, by retention of profit attributable to equity shareholders. As it is shareholders money, the expectation of the shareholders to have value appreciation on this money will be the same as in the case of equity share capital. Hence, it bears the same cost as the cost of equity share capital.

2.1.7 MEASUREMENT OF EVA

There are several techniques of estimation of equity cost of the firm. The Capital Asset Pricing Model (CAPM) technique is used more in order to calculate cost of equity.
2.1.7.1 Capital Asset Pricing Model

Cost of Debt Capital is easy to calculate as it depends on actual after tax cash outflows on account of interest payment. Calculation of cost of Equity Capital is little difficult as it depends on market expected rate of return. There are many theories to calculate Cost of Equity Capital. Out of all those theories Capital Assets Pricing Model (CAPM) is the most widely used method of calculating the Cost of Equity Capital.

Under CAPM cost of Equity Capital is expressed as:

\[
\text{Risk Free Rate} + \text{Specific Risk Premium} = \text{Risk Free Rate} + \text{Beta} \times \text{Equity Risk Premium} = \text{Risk Free Rate} + \text{Beta} \times (\text{Market Rate} - \text{Risk Free Rate})
\]

The risk-free rate represents the most secure return that can be achieved. In the Indian perspective, if anyone wants to sleep soundly at night should invest his savings in long-term tax-free government bonds, which is insensitive to what happens to stock market. In other worlds, yield on long-term tax-free government bonds may be considered as the risk free rate. There is no consensus among the practitioners regarding risk free rate. But in this research the Indian long-term tax-free government bonds is considered.

Specific Risk Premium is a multiple of Beta and Equity Risk Premium. Equity Risk Premium is almost same for all the listed companies in stock market. Unless the volatility of share price and share market indices of two companies is the same, their Beta will be different.
2.1.7.1.1 Equity Risk Premium

Equity Risk Premium is the excess return above the risk free rate that investors demand for holding risky securities. It is calculated as "Market Rate of Return (MRR) minus Risk Free Rate". Market rate may be calculated from the movement of share market indices over a period of an economic cycle based on moving average to smooth out abnormalities.

Risk Premium is judgmental based on: firm size (market capitalization), liquidity of the stock and non-diversifiable risk

2.1.7.1.2 Beta

Beta is a relative measure of volatility that is determined by comparing the return on a share, to the return on the stock market. In simple terms, the greater volatility is equal with more risky share and the higher Beta. If a company is affected by the macro economic factors in the same way as the market is, then the company will have a Beta of one and will be expected to have return equal to the market. A company having a Beta of 1.2 implies that if stock market increases by 10% the company's share price will increase by 12%. Beta is a statistical measure of volatility and is calculated as the Covariance of daily return on stock market indices and the return on daily share prices of a particular company divided by the Variance of the return on daily Stock Market indices.

The market Return = (Today's Index – Yesterday's Index) / Yesterday’s Index
The share return  = (Today’s Price – Yesterday’s Price) / Yesterday’s Price

The statistical method of estimating this kind of dependence of one variable on the other is known as simple linear regression. Once the share and market returns of a sufficiently long period have been computed to get a large number of pairs of returns, the regression technical can be used to estimate the beta.

It must be noted that measurement of EVA can be made by using either an operating or financing approach. Under the operating approach, deducting cash operating expenses and depreciation from sales derives NOPAT. Interest expense is excluded because it is considered as a financing charge. Adjustments, which are referred to as equity equivalent adjustments, are designed; to reflect economic reality and move income and capital to a more economically based value. These adjustments are considered with cash taxes deducted to arrive at NOPAT. EVA is then measured by deducting the company’s cost of capital from the NOPAT value. The amount of capital to be used in the EVA calculations is the same under either the operating or financing approach, but is calculated differently.

The operating approach starts with assets and builds up to invested capital, including adjustments for economically derived equity equivalent values. The financing approach, on the other hand, starts with debt and adds all equity and equity equivalents to arrive at invested capital. Finally, the weighted average cost of capital, based on the relative
values of debt and equity and their respective cost rates, is used to arrive at the cost of capital which is multiplied by the capital employed and deducted from the NOPAT value. The resulting amount is the current period's EVA.

2.1.8 ADJUSTMENTS FOR MAKING EVA

Stern Stewart argues that EVA adjustments produce a better measure of Residual Income that enhances comparability and also reduces distortions of managerial incentives. For example, certain adjustment removes or reduces manager's discretion in computing EVA.

To convert the GAAP earning into EVA, it has identified about 164 potential adjustments to GAAP. But due to diverse accounting disclosure practices adopted in India and abroad following are the adjustment being felt quite sufficient in Indian context to convert the accounting profit, also known as AGGP earning, into economic profit or EVA.

Adjustments include such items as:

1. Additions for interest expense after-taxes (including any implied interest expense on operating leases);
2. Increases in net capitalized R&D expenses;
3. Increases in the LIFO reserve;
4. Goodwill amortization;
5. Accounting for acquisition;
6. Depreciation;

7. VII. Non-interest bearing current liabilities (NIBCLS);

8. VIII. Revaluation reserve etc.

As stated above, EVA is measured as NOPAT less a firm's cost of capital. NOPAT is obtained by adding interest expense after tax, back to net income after-taxes, because interest is considered a capital charge for EVA. Interest expense will be included as part of capital charges in the after-tax cost of debt calculation.

Other items that may require adjustment depend on company-specific activities. For instance, when operating leases rather than financing leases are employed, interest expense is not recorded on the income statement, nor is a liability for future lease payments recognized on the balance sheet. Thus, while interest is implicit in the yearly lease payments, an attempt is not made to distinguish it as a financing activity under GAAP.

Under EVA, however, the interest portion of the payment is estimated and the after-tax amount from it is added back into NOPAT because the interest amount is considered a capital charge rather than an operating expense. The corresponding present value of future lease payments represents equity equivalents for purposes of capital employed by the firm, and an adjustment for capital is also required.
R&D expense items call for careful evaluation and adjustment. While GAAP generally requires most R&D expenditures to be expensed immediately, EVA capitalizes successful R&D efforts and amortizes the amount over the period benefiting the successful R&D effort.

Other adjustment recommended is the amortization of goodwill. The annual amortization is added back for earnings measurement, while the accumulated amount of amortization is added back to equity equivalents. Goodwill amortization is handled in this manner because by "unamortizing" goodwill, the rate of return reflects the true cash-on-yield. In addition, the decision to include the accumulated goodwill in capital improves the real cost of acquiring another firm's assets regardless of the manner in which the acquisition is accounted.

While the above adjustments are common in EVA calculations, according to Stern Stewart, those items to be considered for adjustment should be based on the following criteria:

1. Materiality: Adjustments should make a material difference in EVA;
2. Manageability: Adjustments should impact future decisions;
3. Definitiveness: Adjustments should be definitive and objectively determined;
4. Simplicity: Adjustments should not be too complex.

If an item meets all four of the criteria, it should be considered for adjustment. For example, the impact on EVA is usually minimal for firms having small amounts of operating leases. Under these conditions, it
would be reasonable to ignore this item in the calculation of EVA. Furthermore, adjustments for items such as deferred taxes and various types of reserves (i.e. warranty expense, etc.) would be typical in the calculation of EVA, although the materiality for these items should be considered. Unusual gains or losses should also be examined and eliminated if appropriate. This last item is particularly important as it relates to EVA-based compensation plans.

Any change in the accounting adjustment will yield a different EVA number. Thus the computational methodology of EVA is not unique. Ehrbar (1998) talked about an EVA spectrum. The diagram given in Exhibit 1 clearly exhibits all the potential EVAs as running along a spectrum:

**Figure No. 1.1: The EVA Spectrum**

<table>
<thead>
<tr>
<th>True EVA</th>
<th>Basic EVA</th>
<th>Disclosed EVA</th>
<th>Tailored EVA</th>
</tr>
</thead>
</table>


2.1.8.1 True EVA: The most theoretically correct and accurate measure of economic profit. Calculated with all relevant adjustments to accounting

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data and using the precise cost of capital for each business unit in a company. It is extremely difficult to compute.

2.1.8.2 Basic EVA: The EVA, which would be derived by using unadjusted GAAP operating, profits and the GAAP balance sheet. It is an improvement on regular accounting earning, as it recognizes that equity capital has a cost.

2.1.8.3 Disclosed EVA: It is the EVA computed by Stern Stewart and Co to rank companies. It is computed by making about a dozen standard adjustments to publicly available accounting data. It is much better than basic EVA but not as good as it should be for internal management.

2.1.8.4 Tailored EVA: An insider can calculate this EVA by making tailor-made adjustment peculiar to the organization concerned. The EVA peculiar to the organizational structure, business mix, strategy and accounting policies of each company.

Tailored EVA is the ideal EVA measure. But, it is difficult for an outsider to use this definition of EVA for sheer lack of information. Therefore, in the present study, EVA has been calculated in a manner that lies in between “Basic EVA” and “Disclosed EVA”.

2.1.9 STRATEGIES FOR INCREASING EVA

The spread return of capital and cost of capital (r-c) shows whether a company has earned a return from its business that is moreover its total cost of capital. If the spread were positive, EVA would also be positive.
The logic for taking beginning invested capital for calculating periodic EVA is that a company would at least take a year's time to earn a return on investment. Given a particular level of spread, EVA would depend on the beginning invested capital. Given a particular level of invested capital, EVA would depend on spread. Thus there are two factors that drive EVA—the spread and the invested capital. The spread denotes the relative profitability and invested capital denotes the size or growth. If a company has negative profitability (i.e., spread) growth in size would reduce EVA. To reduce the impact of negative EVA, invested capital should be economized. On the other hand, if the spread were positive, growth in firm size would indicate higher EVA. However, it is true that for skill-based companies (e.g., companies in the Information Technology sector) growth does not involve commensurate increase in invested capital. This may prompt some people to conclude that EVA would not be a useful variable to explain stock price movements of a research based or skill-driven company. But, Stewart (1991) defended EVA on this count. Thus, the message of the EVA is that if the return \((r)\) of a company were not adequate enough to over the cost of capital \((c)\) in full, more investment in the business would mean more negative EVA. In this situation, the company should try to either increase the \((r)\) or reduce the capital invested to improve EVA. The idea behind EVA is that shareholders must earn a return that compensates the risk taken. A zero EVA indicates that the return earned is as just sufficient so as to compensate the risk. EVA
holds a company accountable for the cost of capital it uses to expand and operate its business and whether a company is creating real value for its shareholders.

A company’s EVA can be improved in the following two ways:

2.1.9.1 Operating Side

1. Increases the returns from the assets already in the business by running the income statement more efficiently without investing new capital;

2. Invest additional capital and aggressively build the business so long as expected returns on new investments exceed the Cost-of-Capital;

3. Release capital from existing operations, both by selling assets that are worth more to others, and by increasing efficiency of capital by such tactics as turning working capital faster and speeding up cycle times.

2.1.9.2 Financing Side (lowering average Cost-of-Capital)

a. Aggressive use of debt:

1. Tax benefit of substituting debt for equity;

2. Obligation of repaying debt will remove the irresistible temptation to over-invest in under-serving assets or make overpriced acquisitions;
3. Makes it easier to concentrate ownership in the hands of people best able to affect value managers and employees.

b. Reduce the Cost of Equity

1. Internal: reducing the overall business and operating risk associated with the company;

2. External: overall interest rates in the economy decline;

3. External: the risk premium on equity investments declines.

2.2 REVIEWS OF PARTICULARS OF EVA

2.2.1 EVA AND TRADITIONAL PERFORMANCE MEASURES

Investors and financial managers have been burnt by inflation. Creative accounting has learnt not to take accounting profitability at face value to judge the financial performance of a business. After constant adoption of the technique for decades, the theoreticians as well as the practitioners realized that there were limitations in accounting using business income measurement. Some of these limitations are:

2.2.1.1 Pitfalls of Traditional Performance Measurement

The maxim “what gets measured gets managed” does not only refer to shareholders value. A review of businesses’ favorite financial performance measures – and their pitfalls – shows that managers and executives should be very careful. While business schools have been preaching valuation concepts for decades, earnings per share and other
traditional financial measures continue to rule supreme. However, these metrics have many risks.

2.2.1.2 Cost of Equity

The measurement of profitability based on traditional financial accounting data alone can be misleading, as they do not reflect the cost of capital incurred for making investments. Typically, they are precise at measuring the cost of debt financing, but largely ignore the cost of equity financing. The existing method of accounting, although standardized, cannot eliminate some inherent flexibility in accounting practice. Some cases include the subjectivities in estimating the life of depreciable fixed assets.

2.2.1.3 Opportunity Cost and Risk Adjusted Rate of Return

The accounting based financial measures fail to recognize the concept of opportunity cost and risk adjusted rate of return. According to the traditional concept, information about the risk of investments is never incorporated in the financial statements and thus they provide a distorted picture of profit of the firm and the overall movement of the stock market.

2.2.1.4 Misleading Focus for Improvement of Performance

Another problem associated with the traditional financial reporting by, Du Pont Model and similar accounting based approaches is a misleading focus for improvement of performance. With ROI as the
measurement, index managers opt for investment cuts. This slowly kills off their business for the sake of improving performance.

2.2.1.5 Post-mortem Analysis of Financial Data

The accounting based approach is nothing but a post-mortem analysis of financial data, whereas financial decision-making demands data with future projections. So, the accounting income concept does not provide the required support in decision-making.

2.2.1.6 Over Investment

Profit and profit margin measures often drive over-investment and vertical integration because they overlook capital and its cost. Increasingly, different businesses and business models consume varying levels of capital at varying costs. Managers are often drawn to higher margin businesses that, on the surface, may seem more attractive. For example, profits are often improved with newer production technology – but they must be, to compensate for the higher levels of investment. Traditional financial measures ignore the returns that shareholders expect. Any corporate project with just a positive – but not necessarily an adequate – return above zero can improve a manager’s margins, unit cost, profit and productivity measures. However, such a project can also destroy value.
2.2.1.7 Over production

Traditional measures of unit cost, utilization and income frequently promote troublesome over-production, particularly at the end of a year or quarter. Producing to capacity rather than to demand, often appears to reduce costs, yet doing so can also raise the cost of invested capital. The bias toward over-production, despite demand, is exacerbated by absorption accounting practices, which convert operating costs into inventory. This practice gives the illusion of lower costs from the distorted perspective of a cost per unit, while creating operating burdens (e.g., uneven and inflexible production) and vast quantities of unnecessary inventory. Foregone revenue is endemic to this vicious circle, because heavy discounting and trade promotion are needed to unload the extra product, often at the end of each quarter.

2.2.1.8 Feed the Dogs, Starve the Stars

Many managers have a strong affinity for percentages because of their intuitive appeal. Unfortunately, a focus on percentage margins and rates of return starves the “stars” and feeds the “dogs”. A low-return “dog” business might be motivated to pursue return expanding growth that, if below the cost of capital, would destroy value. A high-return “star” business might overlook or reject return-diluting growth that, although above its cost of capital and therefore additive to value and EVA, will decrease returns.
2.2.1.9 Service Economy

Traditional financial measures, being based on traditional business models, have not kept up with the pace of change. New business models are often based on services, outsourcing, partnerships and other innovative ways of doing business. Therefore, traditional financial measures are inherently biased against the new service economy. Their blunt nature is too simplistic, creating impediments to profitable growth in a world where more and more service-oriented businesses are being designed around razor-thin margins, but with low capital investment. Similarly, a bias against viable, long-term investments and economic growth can result from a simplistic, near term income focus.

2.2.1.10 Poor Decisions

Traditional financial measures exclude the shareholders’ investment in the business; an incomplete measure that ignores capital is entirely inappropriate to handle the many business decisions that trade-off between profit margin and capital utilization (velocity). Traditional financial measures confuse accounting anomalies with the underlying economics of business. When tied to incentive compensation, this can lead to dysfunctional behavior among managers and top executives alike. A cellular company delayed the roll-out of its digital network conversion by several months to avoid depreciation, despite the fact that the cash was already spent and competition was stealing customers with digital service. One company executive once explained that, “in business, you
must often make decisions that you would never make if you actually owned the company”. A lesson overlooked by business schools is that accounting often drives major business decisions and not because of the economics.

2.2.1.11 Traditional Financial Metrics are Lagging Indicators

While the traditional financial metrics are value-based, they are nonetheless lagging indicators. They offer little help for forward-looking investments, where future earnings and capital requirements are largely unknown investments such as new product introductions and capital or new market entry. This would lead to narrow short-term decision-making based on bottom-line financial results.

2.2.2 COMPARATIVE BETWEEN EVA AND SOME TRADITIONAL MEASUREMENT

It is believed that EVA is a better performance measure than traditional measures like Earning Per Share (EPS), Return On Investment (ROI), or Return On Net Worth (RONW). EPS depends largely on the vagaries of accounting policies followed by a firm. Thus, EPS is as much reliable as the accounting profit. Accounting profit depends on the firm’s capital structure. In computing accounting profit, only one part of cost of capital (i.e., borrowing cost) is deducted. And it does not reflect the true economic profit. On the other hand EVA is the residual profit after deducting full cost of capital from operating profits.
Return on Investment (ROI) considers only one side of the performance. ROI is computed as follows:

\[ \text{ROI} = \text{Profit Margin} \times \text{Asset Turnover} \]

or

\[ \text{ROI} = \left( \frac{\text{Income}}{\text{Sales}} \right) \times \left( \frac{\text{Sales}}{\text{Investments}} \right) \]

This measure is simple to compute and the formula gives a percentage that determines how the manager of a particular unit is doing. But executive reliance on it may lead to rejection of economically profitable projects or acceptance of unvalued projects. Both would lead to destruction of shareholders value. Consider a firm with a present ROI of 22 percent and an overall cost of capital of 18 percent. The firm receives a new investment proposal with an estimate ROI of 20 percent, whereas cost of capital remaining unchanged. If the firm’s objective is to maximize ROI, it may reject the project. But actually, the project would have added two percent economic surplus to the wealth of the firm. Consider another example. Suppose the present ROI of the firm is 10 percent and cost of capital 16 percent. The firm receives a new investment proposal with an estimated ROI 12 percent, with no change in cost of capital. The firm would accept the proposals, which may happen to maximize ROI. But this decision would destroy the firm’s wealth. EVA compares ROI with the cost of invested capital and a firm, with the objective of EVA maximization, and would accept all fresh investment proposals so long as the expected EVA is positive.
EPS, ROI and another performance measures are simple measures, yet they suffer from substantial weaknesses.

1. Income manipulation may be possible since income and investments or assets base has not been defined to ensure consistency;
2. Manipulation may result if different units make different accounting choices;
3. Income is based on accrual accounting which dose not considers cash flows or time value of money and hence may not provide the best measure;
4. In an effort to improve performance, managers may be motivated to keep old assets and not replace them when it is most beneficial for the organization;
5. The measures focus attention on how well the units perform but no effort is made to determine how well the unit performs relative to the companies’ wide objectives.

2.2.3 IMPLEMENTING OF EVA

2.2.3.1 The 4- Ms Depicting Process of EVA

Stern Stewart describes four main applications of EVA with four words beginning with the letter M. Measurement, Management System, Motivation and Mindset.
2.2.3.1.1 Measurement

Any company that wishes to implement EVA should institutionalize the process of measuring the metric, regularly. This measurement should be carried out after carrying out the prescribed accounting adjustments. Most accurate measure of corporate performance over any given period translates accounting profits into economic reality.

Measuring EVA can give managers a better focus on performance, and provides a foundation for a comprehensive financial management system.

2.2.3.1.2 Management System

While simply measuring EVA can give companies a better focus on how they are performing. Its true value comes in using it as the foundation for a comprehensive financial management system that encompasses all the policies, procedures, methods and measures that guide operations and strategy. The EVA system covers the full range of managerial decisions, including strategic planning, allocating capital, pricing acquisitions, setting annual goals and even day-to-day operating decisions. In all cases, the goal of increasing EVA is paramount.

2.2.3.1.3 Motivation

To instill both the sense of urgency and the long-term perspective of an owner, Stern Stewart designs cash bonus plans that cause managers to think like and act like owners because they are paid like
owners. Indeed, basing incentive compensation on improvements in EVA is the source of the greatest power in the EVA system. Under an EVA bonus plan, the only way that managers can make more money is by creating even greater value for shareholders. This makes it possible to have bonus plans with no upside limits. In fact, under EVA the greater the bonus for managers, the happier shareholders will be.

EVA-based incentive system, however, encourages managers to operate in such a way as to maximize the EVA, not just of the operations they oversee but also of the company as a whole.

2.2.3.1.4 Mindset

When implemented in its totality, the EVA, financial management and incentive compensation system transforms a corporate culture. By putting all financial and operating functions on the same basis, the EVA system effectively provides a common language for employees across all corporate functions. EVA facilitates communication and cooperation among divisions and departments. It links strategic planning with the operating divisions, and it eliminates much of the mistrust that typically exists between operations and finance. The EVA framework is, in effect, a system of internal corporate governance that automatically guides all managers and employees and propels them to work for the best interests of the owners. The EVA system also facilitates decentralized decision making because it holds managers responsible for-and rewards them for-delivering value.
2.2.3.2 Other Major Issues Related to the Implementation of EVA

Other major issues related to the implementation of EVA can be well explained in the geographical or cultural context. The relative simplicity or complexity in adopting it as measure of corporate performance in some countries and cultures. The characteristics of a company where it can be easily implemented, the particular stage in the organizational life style when it works best and finally its suitability to one particular industry. A lot of attempts have been made to solve these issues and after thorough analysis of the concept it has been observed that there is neither any geographical or cultural context, nor any particular stage in a firm’s lifecycle where and when it can be best implemented. The idea company to implement it is one in which the board of directors and the senior management want to improve the efficiency of a firm, take advantage of opportunities quickly and align the interests of the management shareholders. As far as the industry type is concerned, the industry is far or less important than the attitude of management. The management must want the benefits of EVA. This is the key driver of its success.
2.2.3.3 Essential Reasons for Implementation of EVA

In brief, the essential reasons for implementation of EVA are:

1. It is a consistent way of improving firm;
2. It allows managers to make better decisions;
3. It aligns interests of managers and investors;
4. It improves communication;
5. It is used to evaluate corporate management;
6. It is a best measurement of shareholder’s wealth.
7. Five step processes are needed for implementation of EVA:
8. Introduce EVA to management and the board of directors;
9. Establish EVA centers, define EVA, and provide EVA training;
10. Develop the EVA financial management and reporting system;
11. Refocus and strengthen incentives;
12. Train line manager.
The Critical Success Factors of Implementing EVA are:

1. Education;
2. Commitment from Top Management;
3. Systems support;
4. Compensation Integration.
5. Common mistakes that threaten the implementation of EVA are:
6. Failure to fully integrate EVA;
7. Implementing EVA too fast;
8. Top management lacks commitment;
9. Insufficient training.

2.2.4 BENEFIT AND ADVANTAGES OF EVA

Under conventional accounting most companies show good profits. But the profit they are earning are often less than their full cost of capital. EVA looks at the profit correctly by also appropriating a charge for all capital including equity capital. Any amount equal to the capital charge is the minimum acceptable compensation for the risk that the owners take by investing in the firm. Profit beyond the capital charge, that is the value a business entity creates plus the profit beyond the capital charge that creates value for the owners.

For years, companies have measured their shareholder returns in terms of size rather than quality. Companies grew, profits improved, but nobody ever concentrated on the growth of value. Often, there was irrational increase in the asset base, with nobody to account for it. EVA
corrects this anomaly by looking at the return in relation to the amount invested in the business.

EVA makes managers care about managing assets as well as income, and helps them properly assess the trade-off between the two. As a result, managers use assets more diligently and prudently. It enables them to explore a new world of opportunities to build competitive advantage.

In most cases, the articles referenced cited many positive aspects of EVA. EVA aligns employee behavior with wealth creation. It can be used to separate employee incentive compensation from the traditional accounting measures; moreover the concept is relatively easy to understand and communicate. Milunovich and Tsuei (1996)\(^\text{15}\) believe that using EVA encourages capital discipline by making managers consider the cost of capital used. From the viewpoint of corporate management, Jakson (1996)\(^\text{16}\) states that EVA provides the opportunity for an increase in managerial accountability as a result of its ability to measure the required economic return on all investments. Further, they assert that the process can be customized to fit the needs of the organization and that it can change management behavior when used effectively. Tully (1993)\(^\text{17}\) adds that EVA allows managers, as well as investors, to look at their


business operations and quickly see whether the firm is becoming more or less valuable.

Chamberlain and Campbell (1995)\(^{18}\) see EVA as one of the measures that combine the income statement and the balance sheet and helps to discourage managers from achieving short- term profits at the expense of long-term goals.

O’Byrne (1996)\(^{19}\) states that EVA provides the operating performance measure and valuation multiples that are needed to link theory to practice. Indeed multiples of positive EVA is significantly higher than those of negative EVA, implying that companies with negative EVAs have value that is higher than what would be expected if the market valued all EVA at the same multiple. In addition, multiples of capital tends to decline with size, implying that the market assigns higher multiples to a given level of EVA for smaller companies.

### 2.2.4.1 Advantages of EVA

1. One of the most important benefits of EVA as a performance measure and motivator is that the concept is very easy to understand right by the people from the top management down to the shop floor operators;

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2. EVA helps to create a common language for use not only within and throughout the corporation but also for top management in its communications with outside investors;

3. A major benefit is the fact that EVA is not a ratio but an absolute value, it measures value added in rupees;

4. EVA provides a measure that can be used for all corporate planning and financial functions. It is an all-purpose corporate governance tool. Besides performance measurement, EVA can be used for capital budgeting and acquisition pricing as well as providing a basis for management incentive compensation;

5. EVA eliminates economic distortions of GAAP to focus decisions on real economic results;

6. EVA provides for better assessment of decisions that affect balance sheet and income statement or trade offs between each through the use of the capital charge against NOPAT;

7. EVA aligns and speeds decision-making, and enhances communication and teamwork.

Academic researchers like Dierks and Patel,1997 have argued for some other additional benefits are:

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1. Goal congruence of managerial and shareholder goals achieved by tying compensation of managers and other employees to EVA measures;

2. Better goal congruence than ROI;

3. Annual performance measured tied to executive compensation;

4. Provision of correct incentives for capital allocations;

5. Long-term performance that is not compromised in favour of short-term results;

6. Provision of significant information value beyond traditional accounting measures of EPS, ROA and RO.

In order to achieve all these benefits, it has been necessary to make a few organizational changes and to sustain some costs. It must change the culture of the entire Financial Department. The concept of EVA has to be very well understood by all the people that are going to use it. So it is necessary to train all the people in how to use EVA. And this may be the biggest challenge in the entire implementation process. Managers and employees need to understand, first, why profits and efficiency are good things. They must be made to see how greater profits and productivity lead to benefits for employees and local communities as well as for the shareholders. Secondly employees must be shown how EVA can help them make decisions that lead to greater profits and efficiency.


2.2.5 LIMITATIONS OF EVA

EVA also has its critics. The biggest limitation is that the only major publicly available sample evidence on the evidence of EVA adoption on firm performance is an in-house study conducted by Stern Stewart. Besides there are a number of single-firm or industry field studies.

Limitations of EVA observed are as under:

1. EVA does not control the size differences across plants or divisions;
2. EVA is based on financial accounting methods that can be manipulated by managers;
3. EVA may focus on immediate results which diminishes innovation;
4. EVA provides information that is obvious but offers no solutions in as much the same way as historical financial statements do;
5. Given the emphasis of EVA on improving business-unit performance, it does not encourage collaborative relationship between business unit managers;
6. EVA although a better measure than EPS, PAT and RONW is still not a perfect measure.

Some researchers recommend using other performance measures along with EVA and suggest the balanced scorecard system. Some of them have noted that EVA does not correlate as strongly with stock
returns as its proponents claim. Chen & Dodd (1997)\textsuperscript{21} found that, while EVA provides significant information value. Other accounting profit measures also provide significant information and should not be discarded in favor of EVA alone. Biddle, Brown & Wallace (1997)\textsuperscript{22} found only marginal information content beyond earnings and suggest a greater association of earnings with returns and firm values than EVA, residual income, or cash flow from operations.

Finally, a key criticism of EVA is that it is simply a retreated model of residual income and that the large number of "equity adjustments" incorporated in the Stern Stewart system may not be necessary.

The similarity between EVA and residual income is supported by Chen and Dodd (1997) who note that most of the EVA and residual income variables are highly correlated and are almost identical in terms of association to stock return. Therefore residual income can be used instead of EVA.

\textbf{2.2.6 APPLICATION OF EVA}

To make EVA an effective operational management tool, one has to follow three stages of EVA system, Planning, Executive and Evaluation.


At the beginning the management must begin by making a plan formulated in terms of expected EVA and the management has to accept the responsibility in the process. Generally the management has to understand the 4 basic conditions in order to follow the EVA system more effectively.

1. Well defined managerial objectives in terms of earning a positive EVA or at least increase EVA;
2. Selection of appropriate criteria for investment projects;
3. Evaluation of actual performance of company’s investment at a regular time interval and using EVA for shareholder’s point of view;
4. Incentive scheme must be provided to the concerned manager for the capital allocation decision in the form of year and bonuses.

The number of companies that have turned to economic value added (EVA) over the past few years as a new and modified way to gauge corporate financial performance is going up. Indian corporate also recognizes the importance of EVA. Particularly, after the liberalization on foreign holding in Indian companies the concept of shareholder value is gaining ground. Some companies e.g., Hindustan Lever, NIIT, Infosy Technologies, Hyderabad based Dr. Reddy Laboratories have already made EVA a part of their published Annual Reports and others e.g., Ranbaxy Laboratories, Samtel India Ltd. have started calculating EVA as an internal report. EVA has become a part of doing business at NITT. EVA has enabled the management to link key decisions to shareholder value.
Several hundred front line managers have already undergone orientation and training in implementing EVA in their business activities.

2.3. REVIEW OF CAPABILITIES EVA

2.3.1 EVA AS A REWARD SYSTEM

EVA sets managerial performance target and links it to reward systems. The single goal of maximizing shareholder value helps to overcome the traditional measure problem, where different measures are used for different purposes with inconsistent standards and goal. Rewards would be given to managers who are able to turn investor’s money and capital into profits efficiently. Researches have found that managers are more likely to respond to EVA incentives when making financial, operational and investing decision, (Biddle, Gary, 1997) allowing them to be motivated to behave like owners. However this behavior might lead to some managers pursuing their own goal and shareholder value at the expense of customer satisfaction.

EVA as a reward system, unlike simple traditional budgeting, focuses on ends and not on means as, it does not state how a manager can increase company’s value as long as the shareholders wealth are maximized. This allowed managers to have discretion and free range creativity, avoiding any potential dysfunctional short-term behavior. Rewards such as bonuses from the attainment of EVA target level are

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usually paid fully at the end of 3 years. This is because workers’ performances are monitored and would only be rewarded when this target was being consistently maintained.

2.3.2 EVA, CREATION WEALTH AND REWARD SYSTEM

Stern Stewart and Company advises that incentive pay for period \( t \) be based on the difference in \( \text{EVA}_t \) and \( \text{EVA}_{t-1} \). Where \( \text{EVA}_{t-1} \) serves as a proxy for \( \text{EVA}_t \). However, it is needed to note that it fails to account for changed expectations regarding all future EVAs.

One possible response to this omission is to include equity based compensation whereby employees share in the benefits of the wealth they create over future periods through the appreciation (or depreciation) in the value of the shares they own. To the extent that the actions of the firm’s employees impact investor expectations of future residual income and these revised expectations are incorporated into the firm’s equity value, seemed reasonable. McCormack and Vytheeswaran (1998)\(^{24}\) suggest that firm performance be measured in such a way as to explicitly account for changed expectations regarding residual income for all future periods.

How should firm’s performance be evaluated for the purposes of setting employee compensation? In order to answer this question we must first distinguish between expected performance and exceptional

performance. As a practical matter Murphy (1999)\textsuperscript{25} found that the most common basis for determining incentive compensation was to begin paying a bonus once the firm's performance reached 80 percent of the expected level of performance for the period and to continue increasing the bonus up to 120 percent of expected performance, after which, no added bonus be paid. Consequently, incentive pay is often contingent on a comparison of actual and expected performance levels. For example, if residual income is used to assess firm performance and the amount produced in period $t$ is $R_{It}$, then incentive compensation should be based on the difference in the realized level of residual income for period $t$ and the expectation of this quantity formed in period $t-1$, i.e., $R_{It} - E_{t-1}[R_{It}]$. However, we know that this procedure ignores the effects of wealth creation corresponding to changed expectations regarding future residual income for period's $t+1$ and beyond either from existing investments or new investments undertaken during the period.

\subsection*{2.3.3 EVA AS MANAGEMENT SYSTEM}

An increasingly popular topic among institutional investors, managers, legislators, regulators and academics is that of corporate governance. While different people typically interpret a hot issue such as this differently, a broad definition formulated by Stanford University Law School asserts that, “Modern corporations, who take advantage of technological progress and scale economies, are large organizations

\footnotesize
requiring heavy investments. The amounts of capital required often can be raised only by pooling the savings of a multitude of investors, who rely on others to manage their investments and run the enterprise. The institutions – the particular set of legal rules, incentives, and behaviors – that support and underlie that reliance by investors constitute the system of corporate governance in a given society”.

A corporate management system is the governance framework that defines the measures, incentives, tools and controls supporting decision-making consistent with a company’s strategies to maximize investor’s value. Many management systems, based on archaic metrics and accounting conventions, such as earnings growth, earnings per share, return on equity, internal rate of return, market share, margin, and revenue are quite adept at discouraging, if not destroying, value. These measures are therefore more likely to lead to incongruent decision-making. Conflicting messages from different measures set the stage for internal conflict, dysfunctional behavior and the sub-optimization of total enterprise value. These systems were designed primarily as reporting and control systems for lenders and subsequently adopted by managers as variance measurement tools in the centralized command-and-control organizations more suited to less turbulent times.

An EVA management system aligns the interests of employees with shareholder value to promote and reward high performance. With a
focus on organizational and behavioral change, this “rewires” the brain of companies to:

1. Decentralize ownership accountability;
2. Develop strong business literacy throughout the workforce;
3. Confer economic discipline at all decision-making levels of the company; and
4. Institutionalize a culture of high performance.

An EVA management system must establish clear, accountable links between strategic thinking, budgeting and capital planning, daily operating decisions, incentive compensation and shareowner wealth. The power of such a system rests in the fact that it creates commonality across processes, ultimately leading to employees who think and act like owners.

So, why not just turn employees into owners? The broad use of stock and stock options throughout the workforce has increased dramatically in recent years, and yet, contrary to the myopic view often-real success has been elusive. Direct ownership may give employees a share in the enterprise value, but this is well beyond the sight lines of most employees. It also fails to provide the necessary linkage between action and results i.e., the operational levers and firm value. Finally, while everyone wants to share in a bull market, the syndication of market risk by under-diversified employees in a bear market can be quite discouraging.
2.3.4 EVA AS A FINANCIAL MANAGEMENT SYSTEM

A financial management system consists of all the financial policies, procedures and measures that guide a company’s operations and its strategies. It addresses the following questions as:

1. What are our overall corporate financial goals and how are they to be communicated both internally as well as to the external investing community?
2. How business is plans to be evaluated?
3. How are resources to be allocated?
4. How the ongoing operation performance to be evaluated and what is the corporate rewards system for the employees?

Companies generally use different measures for answering each of these questions, for example for evaluating an investment proposal a company may use one of the discounted cash flow method like net present value or internal rate of return. On the other hand, for setting goals and communicating they may use measures such as profit margins, ROE, earnings growth etc. and the management may be compensated based on achieving some target profit figures. This practice of using different financial measures for different corporate functions creates inconsistencies and may lead to confusions. For example, a firm may earn a profit that was much better than expected or budgeted but the capital investment performance may be poor. An EVA financial
management system removes all these inconsistencies and ties all the functions to one measure: the effect on shareholder value.

2.3.5 EVA AND NET PRESENT VALUE

It is widely tested that the value of a firm is measured by the present value of future stream of free cash flows. Cash flow is the value driver. Of course cash flow also depends on certain operating value drivers. The NPV method of measuring firm value is used by Rappaport (1986)\textsuperscript{26} to defining shareholder value of a firm. EVA proponents claim that the firm value can be measured by discounting future EVA’s instead of future cash flows. One question is that, will the firm value differ under EVA and cash flow approaches? As the Tables No. 2.1 and 2.2 illustrate, the lifetime value of the firm would be the same in the EVA method of valuation as in the NPV method. A simple example is taken to illustrate the similarity by considering a firm with a single line of business having five –year life and a cost of capital of 18 percent.

\textsuperscript{26} A. Rappaport, 1986, Creating Shareholder Value (New York: The Free Press).
### Table No. 2.1
A Comparative of NPV and EVA Methods

<table>
<thead>
<tr>
<th>Period</th>
<th>Invested Capital</th>
<th>Operating Profit before Depreciation</th>
<th>Depreciation</th>
<th>NOPAT</th>
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<td></td>
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<td>75</td>
<td>90</td>
<td>-15</td>
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<td>2</td>
<td></td>
<td>120</td>
<td>49.5</td>
<td>70.5</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>130</td>
<td>27.23</td>
<td>102.77</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>145</td>
<td>14.97</td>
<td>130.03</td>
</tr>
<tr>
<td>5</td>
<td>(10.06)*</td>
<td>130</td>
<td>8.24</td>
<td>121.76</td>
</tr>
</tbody>
</table>

*Realizable value of assets at the end of five years.

Source: Paradigm, Vol 25, No. 3, July-September

### Table No. 2.2
A Comparative of NPV and EVA Methods

<table>
<thead>
<tr>
<th>NPV (Method)</th>
<th>EVA (Method)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>Cash Flows</td>
</tr>
<tr>
<td>0</td>
<td>-200</td>
</tr>
<tr>
<td>1</td>
<td>75</td>
</tr>
<tr>
<td>2</td>
<td>120</td>
</tr>
<tr>
<td>3</td>
<td>130</td>
</tr>
<tr>
<td>4</td>
<td>145</td>
</tr>
<tr>
<td>5</td>
<td>140.06</td>
</tr>
<tr>
<td>Value of firm</td>
<td></td>
</tr>
</tbody>
</table>

The critical issue is; why should EVA be used? EVA is better because it is an annual measure as well as lifetime measure. NPV only measures lifetime value of a firm. NPV or cash flow-based method cannot return a reliable annual performance measure. A firm with high growth potential would show negative annual cash flows in the years of growth due to heavy investments. NPV method deducts the entire investments made for future growth in one year and thereby reports a negative cash flow figure for high-growth firms. EVA on the other hand, deducts only a capital charge on such investments from NOPAT. A dotcom, for example, would show huge negative cash flows in the first few years of its existence in spite of high revenue. But the share price of the firm may still go up. In such situation, the cash flow-based model may fail to explain the share price movements. Also, it may be difficult to project future cash flow on the basis of past negative cash flows. EVA measure would deduct a capital charge on massive investment made by dotcom firm in initial years and hence would return a more reliable annual performance figure. Thus, new economy firms may be better valued with EVA.

The advantage EVA over cash flow is also echoed by O’Byrne (1996)\(^{27}\). He advocated the use of EVA in place of cash flows to measure periodic operating performance. They observed that the main shortcoming of free cash flow (FCF) as a measure of periodic operating performance is that “it subtracts the entire cost of an investment in the year in which it

occurs…. EVA effectively capitalizes instead of expensing such corporate investment, and then holds management accountable for that capital by assigning a capital charge.”

2.3.6 EVA AND MARKET VALUE ADDED

EVA theory simply emphasize that earning a return greater than the cost of capital increases the value of a company where as earning less than the cost of capital decreases the value. Stewart (1991) has introduced another measure of shareholder value called Market Value Added (MVA). MVA tells us how much value the market adds over the book value of invested capital. MVA, therefore, denotes the confidence of the capital market on the performance of a company.

Uyemura, Kanter, and Pettit (1996)28 state that EVA is the best performance measure for financial institutions because it has the strongest correlation with MVA. MVA offers top-down evaluation of the firm’s risk dynamics, provides a simple, easy-to-measure capital allocation method, and can easily unify all financial management activities.

Stewart (1991) has mention that MVA is the present value of future stream of EVAs. Stewart coined the term Market Value Added. MVA is defined as absolute rupee spread between a company’s market value and its invested capital.

---

Market Value Added (MVA) also, is the definitive measure of wealth creation because it is the cumulative amount by which a company has enhanced or diminished its shareholders wealth. MVA is the best external measure of performance because it captures the market's assessment of the effectiveness with which a company’s managers have used the scarce resources under their control. It also reflects how well management has positioned the company for long term, because market value incorporates the present value of expected long run net cash flows inflows. MVA is a determinant of the premium the market is willing to place on the company’s value in recognition of its earnings potential. MVA of a company depends upon its past, present and future performance. It may be expressed as the present value of the Economic Profits earned by a company throughout its business life.

\[ MVA = \text{Firm Value} - \text{Invested Capital}. \]

**Firm value = market value of the firm's outstanding debt and equity securities.**

**Invested Capital = the sum total of the funds that have been invested in the firm**

### 2.3.7 RELATIONSHIP BETWEEN EVA AND MVA

Market Value Added (MVA) = (Market Value of Equity +Market Value of Debt)-(Book value of Equity +Book value of Debt)

And above equation is equivalent to:

**Market Value Added (MVA) = Present Value of Future Streams of EVAs**

From the two above equations it could be concluded that:
Market Value = Book Value of Invested Capital + Present Value of Future Stream of EVAs

In other words, consistent improvement in EVA drives market value of equity. Stock prices reflect the expectations of future performance.

Another formula of MVA is:

\[ MVA = \text{Market capitalization} - \left( \text{Equity share capital} + \text{Reserves and Surplus} - \text{Revaluation Reserves} - \text{Accumulated losses} - \text{Miscellaneous Expenditure} \right) \]

It can be observed from the above-modified definition that MVA is almost similar to market price stock value (p/b) ratio. If MVA is positive it implies that p/b is greater than one. Negative MVA implies a less than one p/b ratio. Successful companies add their MVA and thus increase the value of capital invested in the business. It is argued that MVA or value of a firm depends on the rate of return of a company. If a company’s rate of return exceeds its cost of capital, the company will sell in the stock market with a premium compared to its book value of capital and will increase the shareholder wealth. On the other hand, companies that have rate of return smaller than their cost of capital will sell with discount compared to their book value of capital. This principle also applies to EVA. Thus, it is said that positive EVA also means positive MVA and increase value of firm and increase shareholder wealth and vice versa. Therefore, Maximizing MVA, should be the primary objective for any company that is concerned about its shareholder’ welfare. Thus, EVA is the internal measure of corporate performance and that MVA is the external measure...
of corporate performance. MVA reflects how much the capital market is putting value on the invested capital.

### 2.3.7.1 Market Value Added and Wealth Creation

Shareholder wealth would be maximizing only if the company's managers are able to add value to the total Equity Capital. This added value is Market Value Added, or MVA.

\[
MVA = \text{Total Value} - \text{Total Equity Capital.}
\]

\[
\text{Total Value} = \text{Market Value of Equity.}
\]

\[
= \text{Market Capitalization.}
\]

\[
= \text{Current Market Share Price} \times (\text{No. Of Shares Outstanding})
\]

\[
\text{Total Equity Capital} = \text{Book Value of Equity}
\]

\[
= \text{Common Stock} + \text{Capital Surplus} + \text{Retained Earnings} - \text{Treasury Stock.}
\]

### 2.3.7.2 How Does MVA Relate to EVA?

In order to increase MVA, it is needed to increase Economic Value Added.

MVA is a premium based on market expectations of future EVAs.

\[
\text{Shareholders' Wealth} = \text{MVA} = \text{PV of Future EVAs.}
\]

And EVA is:

\[
\text{EVA} = \text{Sales} - \text{Operating Expenses} - \text{Depreciation} - \text{Interest Expenses (including Taxes)} - \text{Equity Financing Expenses (or, Cost of Equity} \times \text{Total Equity Capital}
\]
2.3.8 EVA AND SHAREHOLDERS’ VALUE

Almost in all books on financial management, the very first chapter introduces the fact that the goal of financial decisions is to maximize shareholder’s value. But why only shareholder’s value and what about others stakeholders like employees, customers, creditors? If one focuses on the shareholder value creation other stakeholder’s interests will automatically become the sub-goals and achieving these sub goals becomes crucial to the achievement of the overall goal i.e. shareholder value maximization. For example, the firm’s profit depends a lot on how the employees perform and to motivate them the firm needs to satisfy their needs and constantly upgrade their knowledge and skills by proper training. Similarly the firm would be required to pay its creditors on time so that they keep providing them credit whenever needed in the future and the credit availability does not hamper the operations of the firm. So a firm’s goal to maximize wealth of the shareholders can be taken to be a reasonable overall goal.

In general, the shareholder value is the present value of the anticipated future stream of cash inflows from the business plus the terminal value of the company. The positive shareholder value is created when these cash inflows are greater than the investors’ risky investment over the same time frame.

Shareholder’s value is measured by the returns they receive on their investments. A return are in two parts, first is in the form of dividends
and second in the form of capital appreciation reflected in the market value of shares, of which market value is the dominant part. But the management of a firm influences the market value of shares. However, one factor, which has a significant influence on the market value, is the expectation of the shareholders regarding the return on their investment. The share prices are influenced by the extent to which the management is able to meet the expectations of the shareholders. Shareholders are the ultimate owners of the corporate organization, who keep the management as agent for them.

The destruction in value, that is consistent fall in the market value of shares, is making the shareholders unable to get the initial issue price of shares and it is compelling them to offload their shareholding.

If the shareholders start selling their shares and there is no buyer then the company is bound to windup its existence. The interest of the shareholders is well maintained if the prices of the shares of the company in the stock market go on adding value to the shareholders. That is, over a period of time shareholders want an increase in the market price of the shares they are holding. In a nutshell, shareholder’s value of a company may be defined as the Market Value of its Equity shares. Market Value of Equity shares is represented in the Market Capitalization. It is a multiple of number of shares issued by the company and the market value per share of the company. The other way of measuring Market Capitalization of a company is Market Value Added (MVA) plus total Capital of the company.
As total capital is more or less static and changes only through retained earning/loss, Market Capitalization of a company depends on its MVA.

EVA is the performance measure most directly linked to the creation of shareholder wealth over a period of time. EVA gives manager superior information and superior motivation to make decisions that will create the greatest shareholder private enterprise.

Lehn and Makhija (1996)\(^{29}\) conducted an empirical study of a number of U.S. companies for 1987, 1988, 1992 and 1993, which shows that EVA was most highly correlated with returns of shareholders investment. Grant (1996)\(^{30}\) states that security analysts can use EVA to identify firms that are creating value for shareholders. Favorable changes in stock prices will increase stock prices as the equity holders’ residual claim decreases, while debt holders should realize capital gains on their securities through credit upgrades. These researches add that EVA also can be used to design value and growth-oriented investment strategies. Jackson (1996)\(^{31}\) provided a discussion of the benefits of EVA to security analysis. Specifically, Jackson notes that EVA encourages managers to focus on the balance sheet, just as the market does. In practice, many investors look primarily at the income statement, which can result in being


misled as to whether or not value is truly created. Jackson also notes that EVA can be used not only to “back out” investors’ expectations about key variables in the current stock price, but also can be used to reveal expectations that are unreasonably high or those that are temporarily under priced by the market.

2.3.9 WEALTH CREATION

Shareholder wealth maximization is now widely considered to be one of the main objectives of managements. Countless firms have affirmed their commitment to shareholders wealth and several managers have fallen for not giving adequate importance to it.

Managers regularly allocate capital to investments based on expected cash flows spanning many years. However, for performance evaluation and compensation purposes, managerial success is most often measured using some variant of historical accounting income. This gives rise to a potentially serious problem since it has long been recognized that reported income is not a consistent predictor of value creation. However, if incentive based compensation is to have the desired effect on shareholder wealth, it is critical that firms measure period-by-period performance using a metric that captures its short-term success in creating shareholder value. The search for such a performance measure is the goal of the rapidly growing literature on value-based management (VBM). Among the set of popular VBM systems, a variant of the traditional residual income measure known as Economic Value Added (EVA) is
arguably the most prominent. This approach argues that firms can manage for value creation by rewarding year-to-year firm performance based on EVA and its determinants (known as value drivers).

EVA is a single, value-based measure that is intended to maximize long-term shareholders' wealth. Value that has been created or destroyed by the firm during the period can be measured by comparing profits with the cost of capital used to produce them. Therefore, managers can decide to withdraw value-destructive activities and invest in projects that are critical to shareholder's wealth. This will lead to an increase in the market value of the company. However, activities that do not increase shareholders' value might be critical to customer's satisfaction or social responsibility. For example, acquiring expensive technology to ensure that the environment is not polluted might not be of high value from a shareholder's perspective. Focusing solely on shareholder's wealth might jeopardize a firm's reputation and profitability in the long run.

2.3.10 RESIDUAL INCOME AND WEALTH

Residual income is an indicator of wealth creation. Here we rely on the work of Flower (1971) and O'Hanlon and Peasnell (1998) who show that wealth creation within an arbitrarily defined period is generally not equal to residual income as traditionally defined.


Stern Stewart and Company coined the term Economic Value Added (EVA) to refer to their version of residual income. EVA is unique in that as its estimation involves a number of adjustments to conventional accounting data.

It begins by defining wealth creation during the period ending at time t. \( V_{t-1} \) is the value of the total investment in the firm at the end of period \( t-1 \). Similarly, by the end of period \( t \) the firm's investors own a firm worth \( V_t \) and receive a cash distribution equal to \( C_t \). To assess the wealth created during period \( t \), it is compared with the value of the investment and cash flow received at the end of the period with the value of the investment at the beginning of the period. However, it is not enough that \( (V_t + C_t) \) exceed \( V_{t-1} \) since the firm's investors have invested an amount equal to \( V_{t-1} \) in the firm on which they require a return \( k \). Therefore, a firm creates wealth for its investors during period \( t \) only where \( (V_t + C_t) \) returns the value of the firm's invested capital \( (V_{t-1}) \) plus the investor's required return on the invested capital, \( kV_{t-1} \), i.e., wealth is created where

\[
(V_t + C_t) > V_{t-1}(1+k),
\]

The wealth created by the firm during period \( t \) \( \Delta (W_t) \) is defined as follows:

\[
\Delta W_t = (V_t + C_t) - (1+K) V_{t-1} = C_t + (V_t - V_{t-1}) - kV_{t-1}
\]

The wealth a firm creates during period \( t \) is equal to the sum of the two terms found in brackets. The first term represents the difference between the realized and expected values of residual income for period \( t \),
and the second term reflects the change in expectations for all future residual incomes beyond period $t$.

Increased residual income from existing firm investments might arise as a result of:

1. Actions taken by the firm’s management to reduce costs or increase revenues in periods $t-1$ and beyond;
2. Changes in the firm’s environment corresponding to the actions of competitors, or;
3. Changes in general economic conditions (e.g., recession or expansion).

Note that only item (1) corresponds to actions taken by the firm’s management and correspondingly serves as a reason for rewarding the manager. However, it is very difficult to separate out the sources of wealth creation that are attributable to the actions of the firm’s manager as opposed to those of the firm’s competitors or simply the effects of changing general economic conditions.

In addition to changes in expectations regarding the performance of existing investments, the firm can also create wealth by making new investments that increase the firm’s stream of future residual incomes. In simple words, undertaking new projects with positive net present values creates shareholders wealth.

To obtain the created shareholder wealth, it must first define the increase of equity market value, the shareholder value added, the
shareholder return, and the required return to equity as shown in Fig No. 2.1

**Figure No. 2.1: Stages of Created Shareholders’ Value**

<table>
<thead>
<tr>
<th>Equity Market Value</th>
<th>↓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase of Equity market Value</td>
<td>↓</td>
</tr>
<tr>
<td>Shareholder Value Added</td>
<td>↓</td>
</tr>
<tr>
<td>Shareholder Return</td>
<td>↓</td>
</tr>
<tr>
<td>Required Return to Equity</td>
<td>↓</td>
</tr>
<tr>
<td>Created Shareholder Value</td>
<td></td>
</tr>
</tbody>
</table>


The equity market value of a listed company is the company's market value, that is, each share's price multiplied by the number of shares. The increase of equity market value in one year is the equity market value at the end of that year less the equity market value at the end of the previous year.

Shareholder wealth added is the term used for the difference between the wealth held by the shareholders at the end of a given year and the wealth they held the previous year.

The shareholder wealth added is calculated as follows:
Shareholder wealth added = Increase of equity market value + Dividends paid during the year - Outlays for capital increases + Other payments to shareholders (discounts on par value, share buy-backs, ... ) - Conversion of convertible debentures

The shareholder return is the shareholder wealth added in one year, divided by the equity market value at the beginning of the year.

Shareholder return = Shareholder wealth added / Equity market value

The required return to equity is the sum of the interest rate of long-term Treasury bonds plus a quantity that is usually called the company's risk premium and which depends on its risk.

Required Return to Equity = Return of Long-term Treasury Bonds + Risk Premium

A company creates wealth for the shareholders when the shareholder return exceeds the share cost (the required return to equity). In other words, a company creates value in one year when it outperforms expectations.

The created shareholder wealth is quantified as follows:

Created shareholder wealth = Equity market value × (Shareholder return - Ke)

Already the shareholder return is equal to the shareholder wealth added divided by the equity market value, the created wealth can also be calculated as follows:

Created shareholder wealth = Shareholder wealth added - (Equity market value × Ke)
Consequently, the value created is the shareholder wealth added above expectations, which are reflected in the required return to equity.

\[
\text{Shareholder Value} = \text{Net Income} - K_{eq} \times \text{Total Equity Capital}
\]

\[
\text{Shareholder Value} = \text{Net Income} - \text{Cost of Equity Capital}
\]

### 2.3.11 EVA AND MARKET VALUE OF COMPANIES

Theoretically EVA is much better than conventional measures in explaining the market value of a company. Financial theory suggests that the market value of a company directly depends on the future EVA.

EVA is useful in explaining the market value of a company, because it allows dissecting a company’s market value into known and unknown (expected) components. The present value of future stream of EVAs actually has two components, present value of current EVA (known component) and present value of expected EVA improvements over the current level (unknown component). The first component coupled with current book value of equity is called Current Operational Value (COV) and the second component is called Future Growth Value (FGV). As market value of a firm is essentially futuristic, it largely depends on FGV of a firm. FGV depends on EVA improvement. If a company just maintains EVA (without any improvement), its NOPAT will provide a cost of capital return on current operational value and no return on FGV. Hence, EVA improvement is a precondition for growth in market value. Market value of a company = Book value of equity + present value of future EVA.
The above formula is mathematically equivalent to the standard Discounted Cash Flow (DCF). This means that the valuation market value of a company is similar to the valuation of a bond (premium if the coupon rate is more than the prevailing interest rate).

Value of Firm = Value of Assets in Place + Value of Future Growth
= (Investment in Existing Assets + NPV Assets in Place) + NPV of all future projects
= Capital Invested in Assets in Place + PV of EVA from Assets in Place + Sum of PV of EVA from new projects

Or:
Value of a company = Capital Invested + PV1 (EVA)

If implement above described entering parameters, then

Value of a company = Capital Invested + PV1(EVA)

If the company produces a return that is equal to capital costs (equal to investor’s discount rate).

Then the market value of company will equal the book value of equity (no premium or discount) i.e. when EVA = 0, then company’s market value of equity equals its book value of equity.

The market value of equity of a profitable company = Market value premium + Book value of Equity

\[
\frac{EVA_1}{(1 + r)^1} + \frac{EVA_2}{(1 + r)^2} + \frac{EVA_3}{(1 + r)^3} + \ldots
\]
Positive EVA builds up a premium to the market value of equity, since investors pay for the excess return.

Stock prices reflect the future EVA. The bigger expected EVA the company has, the higher is the market value of the (stock) company.

Those expectations are very uncertain and continuously changing and so do the stock prices. Thus, in short-term it might be difficult to see the underlying connection between EVA (financial performance) and stock prices.

Market Value Added (MVA) measures the difference between market value (dept + equity) and book value of capital invested by investors since inception. MVA represent the stock market’s judgment of the net present value of the firm taken as a whole. Thus it represents the true achievement of shareholders expectations.

It is believed that market value of a firm, at any given moment, is the summation of beginning invested capital and present value of future steam of expected EVAs. Thus, its EVA generating capacity largely drives market value of a firm. The present study makes an attempt to find the relevance of Stewart’s claim in the Indian Car Manufacturer Companies listed in the Stock Exchange Market of Mumbai.