CHAPTER-2

PART I

ECONOMIC VALUE ADDED (EVA)- A THEORETICAL PERSPECTIVE

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2.1 Introduction

Concept of **Economic Value Added (EVA)** is discussed in second chapter (Part I). Theories which support EVA are studied and analyzed in detail in the following pages. This chapter indicates steps of EVA calculation and illustrates various advantages and disadvantages of EVA.

2.2 Financial Performance

A Company as an organization has the objectives to achieve some goals planned with the staff. They can determine whether the Company has achieved its objectives or not by understanding the performance.

The performance of the Company can be calculated using the financial ratio analysis. The calculation using financial ratio analysis gives the benefit in making the financial report, because financial ratio analysis tends to show that the Company is healthy and the performance is increasing, but actually the performance might be decreasing (Utomo, 1999).

Financial performance of a Company can be defined as the result of the Company's efforts in using the whole financial resources effectively and efficiently in order to achieve the Company's objectives. The objectives of the Company can be achieved if the Company is using the whole sources as maximal as possible. Effective is the ability of the Company to achieve the objectives, and efficiency is related to the use of the resources of the Company, that is to minimize the input to get expected output (Daft, 1994).

2.3 The EVA Revolution

In a market-driven economy many Companies will create wealth. Other firms however will undoubtedly destroy it. Discovering those economic factors that lead to wealth creation and destruction among Companies is important to many constituencies, not the least of which is corporate officials and investment managers. For corporate

managers, wealth creation is fundamental to the economic survival of the firm. Managers who fail (or refuse) to see the importance of this imperative in an open economy do so at the peril of the organization and their own careers of finding the "best" Companies and industries in the marketplace is of primary importance to investment managers.

With the proper financial tools, portfolio managers may be able to enhance their active performance over-and-above the returns available on similar risk indexed passive strategies. A new analytical tool called EVA is now assisting this wealth-discovery and Company-selection process. The innovative changes that this financial metric have spawned in the twin areas of corporate finance and investment management is the driving force behind what can be formerly called the EVA revolution (Grant, 2003). "

2.4 Concept of Economic Value Added (EVA)

EVA is a value based financial performance measure, an investment decision tool and it is also a performance measure reflecting the absolute amount of shareholder value created. It is computed as the product of the "excess return" made on an investment or investments and the capital invested in that investment or investments.

"Economic Value Added (EVA) is the net operating profit minus an appropriate charge for the opportunity cost of all capital invested in an enterprise or project. It is an estimate of true economic profit, or amount by which earnings exceed or fall short of the required minimum rate of return investors could get by investing in other securities of comparable risk (Stewart, 1990)."

EVA is a variation of residual income with adjustments to how one calculates income and capital. Stern Stewart & Co., a consulting firm based in New York, introduced the concept on EVA as a measurement tool in 1989, and trade marked it. The EVA concept is often called Economic Profit (EP) to avoid problems caused by the trade marking. EVA is so popular and well known that all residual income concepts are often called EVA even though they do not include the main elements defined by Stern Stewart & Co. (Pinto, 2001).

Up to 1970 residual income did not get wide publicity and it did not end up to be the prime performance measure in Companies. However, EVA has done it in recent years (Mäkeläinen, 1998).

In the 1990's, the creation of shareholder value has become the ultimate economic purpose of a corporation. Firms focus on building, operating and harvesting new businesses and/or products that will provide a greater return than the firm's cost of capital, thus ensuring maximization of shareholder value. EVA is a strategy formulation and financial performance management tool that help Companies make a return greater than the firm's cost of capital. Firms adopt this concept to track their financial position and to guide management decisions regarding resource allocation, capital budgeting and acquisition analysis (Geyser & Liebenberg, 2003).

EVA emphasizes the residual wealth creation in a Company after all costs and expenses have been charged including the firm's cost of capital invested.

In its simplest terms, EVA measures how much economic value in dollars; the Company is creating, taking into account the cost of debt and equity capital (Adnan & Timothy, 2002). The term EVA, a registered trademark of the consulting firm of Stern Stewart, represents the specific version of residual income used by the firm. It is defined as: **EVA=NOPAT- (Invested Capital × WACC).**

The cost of capital is a weighted average that reflects the cost of both debt and equity capital. Thus, EVA measures the excess of a firm's operating income over the cost of the capital employed in generating those earnings. It relates operating income to capital employed in an additive operation. This is in contrast to return on assets (ROA = operating income / capital), which compares operating income to capital employed in a multiplicative operation.

The primary argument advanced in favor of residual income and EVA is that they may encourage managers to undertake desirable investments and activities that will increase the value of the firm, whereas ROA may not (Maclntyre, 1999).

2.5 Calculation of Economic Value Added (EVA)

The proposed method to calculate Economic Value Added for Companies listed in Tehran Stock Exchange (TSE) is in five main steps. These steps are outlined below. These steps are illustrated in the following pages.

2.5.1 Step 1: Review the Company's financial data

Nearly all of the needed information to perform an EVA calculation can be obtained from the Company's income statements and balance sheets. Some of the

needed information may also be included in the notes given at the end of financial statements and also Tehran Stock Exchange (TSE) website.

2.5.2 Step 2: Calculate the Company's Net Operating Profit after Tax (NOPAT)

NOPAT is a measure of a Company's cash generation capability from recurring business activities and disregarding its capital structure (Dierks & Patel, 1997).

The NOPAT is a function of Earnings Before Interest payments and Taxes (EBIT) and the tax rate of the firm (Young & O' Byrne, 2001). From the data given on the income statement, NOPAT is calculated as follows:

NOPAT = EBIT (1 – Tax Rate)

The corporate Tax Rate in Iran is 25 % during study years (2005-2009).

2.5.3 Step 3: Calculating Invested Capital

Calculating invested capital amount is an important step in finding economic profit because a key idea underlying this metric is charging the Company for its use of capital. In order for the Company to generate a positive economic profit, Companies must cover the cost of using the invested capital.

By reviewing of the balance sheet, its basic structure says that total assets are equal to the sum of debt, plus stockholders' equity. Shannon P. Pratt (2002) Stated that the capital structure of many Companies includes two or more components, each of which has its own cost of capital. Such Companies may be said to have a complex capital structure. The major components commonly found in the structure are:

- **Debt**
- **Preferred stock**
- **Common stock or partnership interests**

Capital employed is the book value of return on equity together with book value of liabilities with interest. In other words, capital means all costing financial resources available to the Company. Biddle, Bowen, and Wallace (1999), Fernandez, (2001), Rappaport (1998), and Tortella & Brusco (2003) expressed that Invested Capital is equal to Debt Book Value plus Equity Book Value.

Prinsloo in his thesis (2007), Friedl and Deuschinger (2008) calculated Invested Capital using the operating approach, by subtracting short term Non-Interest Bearing Liabilities (NIBL's) from the total assets.

Invested capital = Total assets – non-interest-bearing liabilities (NIBLs)

Thus invested capital is as following:

Invested capital =total debt +total shareholder's fund (total equity)

2.5.4 Step 4: Calculating Weighted Average Cost of Capital (WACC)

The WACC is the minimum return that a firm must earn on existing invested capital. The WACC can be calculated by taking into account the proportionate weights of various funding sources such as common equity, straight debt, warrants and stock options, and multiplying them by the cost of each capital component.

Weight average capital of cost (WACC) =

(Interest expense / debt) × (debt / capital) × (1-tax %) +equity cost × (equity / capital)

$$\mathbf{WACC = (K_e \times W_e) + (K_p \times W_p) + (K_d(pt)[1 - t] \times W_d)}$$

Where:

WACC = Weighted average cost of capital

K_e = Cost of common equity capital

W_e = Percentage of common equity in the capital structure, at market value

K_p = Cost of preferred equity

W_p = Percentage of preferred equity in the capital structure, at market value

$K_d(pt)$ = Cost of debt (pre-tax)

t = Tax rate

W_d = Percentage of debt in the capital structure, at market value

2.5.4.1 Calculation of Cost of Equity (K_e)

There are 2 ways to calculate K_e - namely:

i) DDM (if given level of dividend and rate of growth)

ii) CAPM (If given the rate of risk and return)

2.5.4.1.1 Dividend Discount Model (DDM)

The Dividend Discount Model (DDM) is a way of valuing a Company based on the theory that a stock is worth the discounted sum of all of its future dividend payments. In other words, it is used to value stocks based on the net present value of the future dividends. The equation most always used is called the Gordon's growth model. It is named after Myron J. Gordon, who originally published it in 1959.

The variables in this model are: P is the current stock price. g is the constant growth rate in perpetuity expected for the dividends. r is the constant cost of equity for that Company. D_1 is the value of the next year's dividends. There is no reason to use next year's dividend using the current dividend and the growth rate, when management commonly disclose the future year's dividend and websites post it.

The Gordon model assumes that the value of a share of stock is equal to the present value of all future dividends (assumed to grow at the constant rate) over an infinite time horizon (Gitman, 1998). The formula for the Gordon model is:

Cost of Equity = (Dividends per share / Price per share) + Dividend growth rate

$$\mathbf{K_e=D_1/P_0+G}$$

Where:

K_e=required return on common stock;

D_1= per-share dividend expected at the end of year 1;

P_0=value of common stock; and

G=constant rate of growth in dividends

This formula indicates that if the dividends expected at the end of the year 1 are divided by the current share price and then the expected growth rate is added. There are two methods for computing the expected growth rate (g), (Brigham,Gapenski, & Daves, 1999):

1-Rate of return on equity method, and

2- Compound growth method.

2.5.4.1.1.1 Rate of return on equity method

In this approach, retention ratio is multiplied by the return on equity in order to calculate the expected growth rate .Growth - exist when there is money retained to be reinvested, indicating growth. Therefore:

$$\mathbf{g = ROE \times Retention\ ratio\ (RR)}$$

Retention ratio: (1− DPS/ EPS)

$$\mathbf{g = ROE \times (1- DPS/\ EPS)}$$

Where,

g: expected growth rate

ROE: Net income to equity ratio (Return on Equity)

Hence, to compute the expected growth rate based on this approach, information about earnings per share, cash dividend per share, net income, and equity of the selected Companies should be collected for the research time period.

2.5.4.1.1.2 Compound growth method

In this approach, the expected growth rate is calculated based on the following relation:

$$FV = PV\ (1+ g)^{n}$$

FV: Future Value after n years

PV: Present Value

n: Number of the years that have compounded interest accrued

g: Expected Growth Rate

2.5.4.1.1.3 Problems with the Dividend Discount Model (DDM)

a) The presumption of a steady and perpetual growth rate less than the cost of capital may not be reasonable.

b) If the stock does not currently pay a dividend, like many growth stocks, more general versions of the Discounted Dividend Model must be used to value the stock. One common technique is to assume that the Miller-Modigliani hypothesis of dividend irrelevance is true, and therefore replace the stocks' dividend *D* with *E* earnings per share.

But this has the effect of double counting the earnings. The model's equation recognizes the tradeoff between paying dividends and the growth realized by reinvested earnings. It incorporates both factors. By replacing the (lack of) dividend with earnings, and multiplying by the growth from those earnings.

c) The stock price resulting from the Gordon model is hyper-sensitive to the growth rate *g* chosen (Dividend Discount Model, 2011).

2.5.4.1.2 Capital Asset Pricing Model (CAPM)

The cost of equity is the opportunity cost that investors require to compensate them for the variability of bottom- line profits (Stewart, 1991).

While this opportunity cost does not appear in any financial statements, stern Stewart approximates it, based on the Capital Asset Pricing Model (CAPM), by adding an individual Company's adjusted risk premium of 6 % in the United States to the return on long-term government bonds. Ross et al. (2001) determined the average risk premium in South Africa for the period from 1925 to 1999 to be 9.8 % ($R_m - R_f$). The average return on the r 150 government bond was used as the risk –free rate (R_f).

In order to use the CAPM, the beta needed to be determined. Beta measure the risk in models of risk in finance. They measure the risk added to a diversified portfolio, rather than total market risk.

CAPM made some assumptions about the behavior of the investors. The most important is that investors are risk avoiders, and investors avoid the risks to diversify in other Companies. CAPM is an expectation model, this model is based on the investors' expectation, what is going to happen, not based on what has happened (Young and O'Byrne, 2001). The formula is:

$$\mathbf{K_e = R_f + \beta\ (R_m - R_f)}$$

Where,

K_e = Cost of equity

R_f = Risk-free rate, the amount obtained from investing in securities and considered free risk, such as government bonds from developed countries.

R_m = Rate of market return, calculated by summing returns in five year period (for this study)

β = Systematic risk (individual risk), calculated by searching the rate of beta's stock in five year period (for this study)**.**

Beta, it measures how much a Company's stock price reacts against the market as a ($R_m - R_f$) = Equity Market Risk Premium, Equity Market Risk Premium (EMRP) represents the return investors expected to compensate them for taking extra risk by investing in the stock market over and above the risk-free rate. Table 2.1 displays risk-free rate (R_f) for five years (2005-2009) of the study:

Table 2.1 The risk-free rate in 2005 to 2009 periods

year	R_f 2005	R_f 2006	R_f 2007	R_f 2008	R_f 2009
Amount of the risk-free rate (R_f)	15.5 %	15.5 %	15.5 %	16 %	16 %

Based on table 2.1, the average of risk-free rate (R_f) for present study is 15.7 %.

2.5.4.1.2.1 Stock Beta

The beta is a measure of a stock's price volatility in relation to the rest of the market. In other words, how does the stock's price move relative to the overall market? Stock Beta is a calculation or measurement of volatility or risk of a stock trading on the stock market. It is the fluctuation in stock prices and the market in general.

As well as Beta is a mathematical measure of the sensitivity of rates of return on a portfolio or a given stock compared with rates of return on the market as a whole. Beta is a measure of an investment's relative volatility. The higher the beta, the more sharply the value of the investment can be expected to fluctuate in relation to a market index.

Beta is a key component for the Capital Asset Pricing Model (CAPM), which is used to calculate cost of equity. Capital Asset Pricing Model (CAPM) uses beta as one of the main co-efficients and measures the expected return on any of security. The beta of a security can be found relative to the market return in the following way:

Beta = Covariance (stock versus market returns)/Variance of the market returns

$$\beta_S = Cov(R_s, R_m) / Var(R_m)$$

Where

β_s= beta of Company

R_s = The return on security

R_m = The market return

Cov (R_s, R_m) = The covariance between the market return and return on security

Var (R_m) = The variance of the market return

In fact, to calculate a stock's beta it only needs two sets of data:

* Closing stock prices for the stock.
* Closing prices for the index these are choosing as a proxy for the stock market.

Table 2.2 indicates the market return (R_m) of Tehran Stock Exchange (TSE) for five years (2005-2009) of the study:

Table 2.2 The market return of Tehran Stock Exchange (TSE)

year	**R_m 2005**	**R_m 2006**	**R_m 2007**	**R_m 2008**	**R_m 2009**
Amount of the market return (R_m)	10259	10074	9737	9841	11207

Most of the times, beta values are calculated using the month-end stock price for the security but for this study, Due to lack of access to monthly information of stock market and some Companies and total stock market beta are calculated using year –end stock price.The return on a stock can be estimated through beta in combination with the market return.

Thus if the Beta of a security is known, it estimated return can be calculated based on the historical market returns. The beta is generally estimated by linear regression on security return and market return.

Stocks that have a beta greater than 1 have greater price volatility than the overall market and are more risky. Stocks with a beta of 1 fluctuate in price at the same rate as the market. Stocks with a beta of less than 1 have less price volatility than the market and are less risky. The table 2.3 shows an Analysis of Common Stock Betas.

The table 2.3 Analysis of Common Stock Betas

Negative Beta	Shows an inverse relation to the stock market and is highly unlikely. Gold Stocks though fall into this category.
Beta of zero	Value of current cash (with no inflation) has a Beta of 0. No matter how the market performs, idle cash sitting always remains the same (with no inflation).
Beta 0 - 1	These stocks are less volatile than the stock market in general. Commonly includes utility Company stocks.
Beta of 1	A Beta of 1 means the stock market is moving in the same direction as the Market Index.
Beta >1	Stocks with a Beta of >1 are more volatile than the stock market. This commonly includes high-tech stocks. This is because as technology becomes rapidly advanced, outdated technology is useless. Many Companies are thus wiped out due to out-dated technology.
Beta >100	This is impossible. A stock can never be 100 times more riskier than the stock market in general. This is because a small change in the returns of the stock will make the stock price go to $0.

2.5.4.1.2.1.1 Problems with Beta

While Beta may seem to be a good measure of risk, there are some problems with relying on beta scores alone for determining the riskiness of an investment.

- Beta looks backward and history is not always an accurate predictor of the future.
- Beta doesn't account for changes that are in the works, such as new lines of business or industry shifts.
- Beta suggests a stock's price volatility relative to the whole market, but that volatility can be upward as well as downward movement. In a sustained advancing market, a stock that is outperforming the whole market would have a beta greater than 1.

2.5.4.1.2.2 The efficient frontier

The CAPM assumes that the risk-return profile of a portfolio can be optimized—an optimal portfolio displays the lowest possible level of risk for its level of return. Additionally, since each additional asset introduced into a portfolio further diversifies the portfolio, the optimal portfolio must comprise every asset, (assuming no

trading costs) with each asset value-weighted to achieve the above (assuming that any asset is infinitely divisible). All such optimal portfolios, i.e., one for each level of return, comprise the efficient frontier. Because the unsystematic risk is diversifiable, the total risk of a portfolio can be viewed as beta.

2.5.4.1.2.3 Problems of CAPM

The CAPM model assumes that either asset returns are (jointly) normally distributed random variables; or that active and potential shareholders employ a quadratic form of utility. It is, however, frequently observed that returns in equity and other markets are not normally distributed (high peak and fat tail). As a result, large swings (3 to 6 standard deviations from the mean) occur in the market more frequently than the normal distribution assumption would expect (Mandelbrot & Hudson, 2004).

The model assumes that the variance of returns is an adequate measurement of risk. This might be justified under the assumption of normally distributed returns, but for general return distributions other risk measures (like coherent risk measures) will likely reflect the active and potential shareholders' preferences more adequately. Indeed risk in a financial investment is not variance in itself; rather it is the probability of losing: it is asymmetric in nature.

CAPM model assumes that all active and potential shareholders have access to the same information and agree about the risk and expected return of all assets (homogeneous expectations assumption).

The model assumes that the probability beliefs of active and potential shareholders match the true distribution of returns. A different possibility is that active and potential shareholders' expectations are biased, causing market prices to be informationally inefficient. This possibility is studied in the field of behavioral finance, which uses psychological assumptions to provide alternatives to the CAPM such as the overconfidence-based asset pricing model of Kent Daniel, David Hirshleifer, and Avanidhar Subrahmanyam (2001).

The CAPM model does not appear to adequately explain the variation in stock returns. Empirical studies show that low beta stocks may offer higher returns than the model would predict. Some data to this effect was presented as early as a 1969 conference in Buffalo, New York in a paper by Fischer Black, Michael Jensen, and Myron Scholes (1972). Either that fact is itself rational (which saves the efficient-

market hypothesis but makes CAPM wrong), or it is irrational (which saves CAPM, but makes the EMH wrong – indeed, this possibility makes volatility arbitrage a strategy for reliably beating the market)

The model assumes that given a certain expected return, active and potential shareholders will prefer lower risk (lower variance) to higher risk and conversely given a certain level of risk will prefer higher returns to lower ones. It does not allow for active and potential shareholders who will accept lower returns for higher risk. Casino gamblers pay to take on more risk, and it is possible that some stock traders will pay for risk as well.

The model assumes that there are no taxes or transaction costs, although this assumption may be relaxed with more complicated versions of the model.

The market portfolio consists of all assets in all markets, where each asset is weighed by its market capitalization. This assumes no preference between markets and assets for individual active and potential shareholders, and that active and potential shareholders choose assets solely as a function of their risk-return profile. It also assumes that all assets are infinitely divisible as to the amount which may be held or transacted.

The market portfolio should in theory include all types of assets that are held by anyone as an investment (including works of art, real estate, human capital, etc) in practice, such a market portfolio is unobservable and people usually substitute a stock index as a proxy for the true market portfolio. Unfortunately, it has been shown that this substitution is not innocuous and can lead to false inferences as to the validity of the CAPM, and it has been said that due to the in observability of the true market portfolio, the CAPM might not be empirically testable. This was presented in greater depth in a paper by Richard Roll in 1977, and is generally referred to as Roll's critique (Roll, 1977)

The model assumes just two dates, so that there is no opportunity to consume and rebalance portfolios repeatedly over time. The basic insights of the model are extended and generalized in inter temporal CAPM (ICAPM) of Robert Merton (Merton, 1973), and the consumption CAPM (CCAPM) of Douglas Breeden and Mark Rubinstein (Campbell & Vicera, 2002).

CAPM assumes that all active and potential shareholders will consider all of their assets and optimize one portfolio. This is in sharp contradiction with portfolios that are held by individual shareholders.

2.5.4.3 Calculation of cost of debt (K_d)

The cost of debt is relatively simple to calculate, as it is composed of the rate of interest paid. In practice, the interest-rate paid by the Company can be modeled as the risk-free rate plus a risk component (risk premium), which itself incorporates a probable rate of default (and amount of recovery given default). For Companies with similar risk or credit ratings, the interest rate is largely exogenous (not linked to the Company's activities). Return on debt is the cost the Company must pay to borrowed capital. This capital can consist of different types of debt with different maturities and interest rates. To be theoretically correct, these different loans should have their own entry in the equation for WACC.

The rate on debt is calculated by dividing financial expenses with the interest bearing debt. The interest bearing debt is comprised of construction contracts in progress, bank loans, credit institutions, mortgage debt and short-term share of long-term debt.

K_d (Cost of Debts) are calculated by dividing between interest expense and total long-term debts of the Company (total debt in this study).

$$\mathbf{K_d = (Interest\ Expense/Total\ Debts)}$$

2.5.5 Step 5: Calculate the Company's Economic Value Added (EVA)

Economic Value Added (EVA) is the financial performance measurement to capture true economic profit of a Company. It is also the performance measurement of the stockholders wealth overtime (Stern Steward & Shiely, 2001). There are diversity ways for calculating EVA which are used in this study.

EVA basically represents a firm's profit from operations after consideration of the cost of capital. Therefore, a firm's value is evaluated to be increasing only when the firm's operating profit after tax is greater than its cost of capital (Lee& Kim, 2009, Milunovich & Tsuie, 1996; Bacidore& et al, 1997).

The EVA model works with three basic components - Capital, NOPAT and WACC. EVA can be defined as the firm's Net Operating Profit After Taxes (NOPAT), less the cost of capital (Rappaport, 1986, 1998). EVA proponents assume that any increment in the firm EVA increases the value of the firm (Chen & Dodd, 1997; Ray& Owners, 2001). From the operational point of view the studies use (Biddle & et al., 1997; Fernandez, 2001; Rappaport, 1998):

$$\mathbf{EVA = NOPAT - (WACC \times IC)} \quad (1)$$

$$EVA = NOPAT - (D + Ebv) \times WACC \quad (2)$$

Where the variables are defined as follows:

NOPAT = Net Operating Profits After Taxes.

D = Debt Book Value.

Ebv =Equity Book Value.

WACC = Weighted Average Cost of Capital

IC =Invested Capital

It can also be defined as the excess returns (*i.e.,* ROCE – WACC) generated from operations multiplied with the quantum of capital employed.

$$EVA = (ROCE - WACC) \times \text{Invested Capital} \quad (3)$$

Where, ROCE = return on capital employed

The ROCE minus the WACC is also called the 'return spread'. If the return spread is positive, it means the Company is generating surplus returns above its cost of capital and this translates into a higher MVA.

Lehn and Makhija (1996) describe EVA as follows: "EVA and related measures attempt to improve on traditional accounting measures of performance by measuring the economic profits of an enterprise – after-tax operating profits less the cost of the capital employed to produce those profits". In case of the first and second formula, NOPAT and Invested Capital may have to be adjusted with about 150 reverse journal entries. However, in practice, about 5-10 adjustments are done for the calculation in case of a Company.

2.6 Advantages of EVA

EVA is frequently regarded as a single, simple measure that gives a real picture of shareholder wealth creation. In addition to motivate managers to create shareholder value and to be a basis for management compensation, there are further practical advantages that value based measurement systems can offer.

An EVA system helps managers to:

- Make better investment decisions;
- Identify improvement opportunities; and to
- Consider long-term and short-term benefits for the Company (Roztoci & Needy, 1998)
- Earnings per share and return on investment/assets do not reflect the true cost of capital, there is no hinge whether shareholders value have been created or destroyed,
- It helps managers to make better investment decisions, identify improvement opportunities and consider long–term and short-term benefits for the Company;
- it measures the quality of managerial decisions and indicates the value growth in the future. The higher the EVA in any year, the better job managers are doing in using fund capital to create additional value,
- It's very easy to compute EVA, extracting the data from both the income statement and the balance sheet and adjusting it.
- EVA is also really the discounted free cash flows of a business,
- EVA is an estimate of a true economic profit (Sharma & Kumar, 2010)
- EVA helps in reducing Agency conflict and improve decision making (Lovata & Costigan, 2002; Biddle et al.1999)
- EVA is more strongly associated with stock return than other measures. (Maditinos & et al., 2006; Lehen and Makhija, 1997)
- EVA Improves Stock Performance (Ferguson & et al., 2005)
- EVA adds more informational content in explaining stock return (Erasmus, 2008; Chen and Dodd, 1997; Kim, 2006; Palliam, 2006)

EVA is an effective measure of the quality of managerial decisions and a reliable indicator of a Company's value growth in the future. Constant positive EVA

values over time will increase Company values, while negative EVA values might decrease Company values.

The advantages EVA can be stated from three aspects of (i) decision making, (ii) performance evaluation, and (iii) Incentive compensations.

2.6.1 Decision-Making

The management decision-making process involves mainly the evaluation of investment and the allocation of the Company's resources. The traditional process in making such decisions is based on cash flow and it is referred to as capital budgeting. EVA may be added now as an additional tool in making investment decisions that involves new projects, mergers and acquisitions. In this respect, EVA is close to Net Present Value (NPV) technique.

The use of cash flows as an important long-term indicator of shareholder value is based on discounting the cash flows in the same way as used in capital budgeting and determination of the worth of takeover targets. For example, the use of EVA in the decision should answer the question of whether the Company being acquired will increase the value of the acquiring Company and whether it will create additional value to the existing shareholders in the future.

According to Damodaran (1998) in his research on value creation the EVA and cash flow return on investment might be simpler than traditional discounted cash flow valuation, but the simplicity comes at a cost that is substantial for high growth firms with shifting risk profiles. He stressed the importance of management’s commitment to value enhancement and added that if managers truly care about value maximization then they can make almost any mechanism work in their favour.

According to the Dow Theory (1999) Forecast some managers take a long-term view of value creation and consider capital and research and development spending of utmost importance for their firm future stability and its product development prospects. These managers are perceived by investors as bullish on the growth potential of their industry and the Company they manage. The recent popularity of EVA stems from the fact that managers are encouraged to make profitable investments since they are being evaluated on EVA target rather than the Return on Investment (ROI).

While using ROI managers will be less enthusiastic about an investment opportunity or they may entirely reject any new investment that reduces their current or existing Return on Investment (ROI) despite increasing EVA. One of the distinguishing features of EVA is applied areas where shareholder value is created. Disaggregation of data at the lower level of management and even at product line and individual customer levels can draw management's attention to where value is created or destroyed. Activities where EVA is maximized and where earnings can be increased at a faster pace than the increase in capital may be given more attention and activities where EVA is being destroyed can be discontinued.

The objective of this approach to capital allocation is to ensure that line of business is constantly contributing to the improvement of the return on existing capital, seeking investments that create value to shareholders and maintaining optimal capital structure levels.

One of the major benefits of using EVA as a decision tool is in the area of asset management. For example, Coca-Cola made a decision to switch to cardboard soft drink concentrate shipping containers from stainless steel containers. The reusable stainless steel containers that sat on the Company's balance sheet were written off slowly. This helped increase profit and profit margins.

It may be conclude that one of the major contributions of EVA is that management now pays greater attention to management of assets, allocation of resources, and capital structure including the operating leverage. Furthermore, EVA is appealing to developing Companies which need to fund their projects through satisfying the value enhancement requirements of investors.

2.6.2 Performance Evaluation

The assessment of management performance brought about more use of financial and non-financial indicators. Ratios that are utilized heavily in the United States include return on assets, Return on Equity, return on sales, and Return on Investment (ROI). Comparable profits and ROI are still the most important criteria used by Company executives to evaluate performance.

According to Radebaugh and Gray (1997) research shows that in other countries such as in Britain, emphasis is placed on the use of budget/actual Comparisons and some form of ROI. In Japan, the use of sales and market share growth

rates are the most important criteria in evaluating divisional and subsidiary managers. The use of EVA in performance evaluation brought about a fresh approach as to how management should think. For example, in an EVA Brochure of the Millennium Chemicals Inc., a Subsidiary of Hanson, top executives consider the creation of value as their mission. Thus, they consider EVA, not only a tool for measuring value creation but a mind set, an attitude and a behavior. Moreover, they feel that EVA goes beyond traditional financial measures to show how they create value through improvements in sales and cost management as well as through managing business assets. In assessing performance through use of EVA, a target EVA for the creation of short-term and long-term wealth has to be established. The target EVA depends on the length of the business cycle and the time between receiving orders from a project to the time of delivery.

While making the evaluation, actual EVA have to be measured against target EVA and any deviations have to be investigated and analyzed in order to know the reason for the deviation and if necessary to make appropriate corrective action. Whenever actual EVA exceeds target EVA, this indicates that management practices are creating more wealth than expected and wealth in this case will be shared between management and shareholders. Whenever actual EVA is less than target EVA, then management practices are not as good as expected. This process increases management effectiveness in staying focused on the interest of shareholders and the creation of their wealth.

This process also provides feedback to executives at all levels, not concerning the actual measurement, but also concerning the assumptions used in establishing the target EVA. As a result, a shift or change in course of action may be necessary. On the other hand, this system may be intimidating to managers who are faced with situations beyond their control where risk is increased and consequently the firm's earnings are lowered. Management may consider leveraging their capital needs in order to reduce their cost of capital recognizing the fact that interest on debt is tax deductable. Such an EVA driven decision leads to creation of wealth. The use of EVA could be extended to all levels of employees throughout the organization. When these employees, especially the sales employees, know that focusing on EVA will provide them with data that reveals margins on a specific product line or customer, then they will be prone to abandon measuring their effectiveness by volume alone and become more comfortable with the economic value approach.

It has to be made clear to top executives that the success of the EVA system in performance evaluation depends a great deal on providing management employees with adequate tools that make the EVA approach successful. According to Kreger (1998) this means authorizing managers to make decisions leading to new innovative ideas to create value.

2.6.3 Incentive Compensation

Most Companies that use the EVA approach tie management performance to executive compensation plans and to the expectations of shareholders. An examination of the annual reports of the Fortune 500 Companies that use EVA revealed that these Companies form a Performance-Based Awards Committee from a group of Directors who are responsible for managing the performance awards plan. The Committee normally establishes performance targets that may be based on any of the performance metrics including EVA. As a condition of award payment, these targets should be met by the top executives of the Company as a whole or by the executives of any of its subsidiaries, divisions or business units.

The payment of the awards may be in cash (cash awards) or in common stock (stock performance awards). The Board of Directors establishes a maximum and a minimum amount of the awards and payments are made upon meeting pre-agreed targets. According to Brabazon and Sweeney (1998) one of the major selling points of EVA is that its supporters suggest that a strong correlation exists between it and the share market value of the related Company.

When the stock value of a firm has gone up, it is viewed as having created value while one whose stock price has gone down has destroyed value. Even if markets are efficient, stock prices tend to fluctuate around the true value and markets are often inefficient. For this reason, firms may see their stock price goes up and their top management rewarded, even if the Company destroyed value.