

**CHAPTER-2**

**PART II**

**MARKET VALUE ADDED (MVA)**

**AND FINANCIAL RATIOS-**

**A THEORETICAL PERSPECTIVE**

**CHAPTER -2**  
**PART II**  
**MARKET VALUE ADDED (MVA) AND**  
**TRADITIONAL FINANCIAL RATIOS-**  
**A THEORETICAL PERSPECTIVE**

**2.7 Introduction**

Concepts such as **Market Value Added (MVA)** and traditional financial ratios are discussed in second chapter- part 2.

This chapter shows calculation of MVA and traditional financial ratios and also indicates limitations of Financial Ratio Analysis.

**2.8 Concept of Market Value Added (MVA)**

Market Value Added (MVA) is a tool to measure shareholder's value at a particular moment this was introduced by Stewart in 1991. Market Value Added (MVA) is the additional market capitalization over and above the book value of equity (Gupta & Kundu, 2008).

From an investor's point of view, MVA is the best final measure of a Company's performance. Stewart (1991) states that MVA is a cumulative measure of corporate performance and that it represents the stock market's assessment from a particular time onwards of the net present value of all a Company's past and projected capital projects. MVA is calculated at a given moment, but in order to assess performance over time, the difference or change in MVA from one date to the next can be determined to see whether value has been created or destroyed.

MVA can be summarized that there are basically only three ways in which a Company can increase its MVA (Stewart, 1991; Ernst & Young, 1994; Firer, 1995; Davidson, 2003):

- By making new investments in projects with a positive return spread (positive EVA);
- expanding current projects earning a positive EVA; and
- By scaling down or eliminating projects that have a negative EVA.

The Market Value Added (MVA) measure is based on the assumption that the total market value of a firm is the sum of the market value of its equity and the market value of its debt. Stewart (1991) defines Market Value Added (MVA) as the excess of market value of capital (both debt and equity) over the book value of capital.

In another words Market Value Added (MVA) is the difference between the current market value of a firm (V) and the capital contributed by its investors (K):

$$\text{Market Value Added (MVA)} = V - K$$

If the Market Value Added (MVA) is positive, the Company has created wealth for its shareholders. If it is negative, then the firm has destroyed value. The capital is the amount that is put in the Company by the shareholders.

According to Stern and Shiely (2001), in order to calculate the market value of a firm, we have to value the equity part at its market price on the date the calculation is made. The total investment in the Company since day one is then calculated as the interest-bearing debt and equity, which includes retained earnings. Present market value is then compared with total investment. If the former amount is greater than the latter, the Company has created wealth.

Stewart (1991) states that Market Value Added (MVA) is an cumulative measure of corporate performance and that it represents the stock markets assessments from a particular time onwards of the net present value of all of a Company's past and projected capital projects. The disadvantage of the method is that like EVA there can be a number of value based adjustments made in order to arrive at the economic book value and that it is affected by the volatility from the market values, since it tends to move in tandem with the market.

## **2.7 Calculation of Market Value Added (MVA)**

Market Value Added (MVA) is the difference between the total market value of the Company and the economic capital (Firer, 1995; Reilly & Brown, 2003). A Company's total market value is equal to the sum of the market value of its equity and the market value of its debt. In theory, this amount is what can be "taken out" of the Company (i.e. when all shares are sold and debt is repaid) at any given time.

$$\text{MVA} = \text{Market value of Company} - \text{Invested Capital}$$

$$\text{MVA} = \text{MV} - \text{IC} \quad (1)$$

Where;

MV: Market Value of Company

WACC: Weighted Average Cost of Capital

IC: Invested Capital

MVA: Market Value Added

From an investor's point of view, MVA is the best final measure of a Company's performance. Stewart (1991) states that MVA is a cumulative measure of corporate performance and that it represents the stock market's assessment from a particular time onwards of the net present value of all a Company's past and projected capital projects. MVA is calculated at a given moment, but in order to assess performance over time, the difference or change in MVA from one date to the next can be determined to see whether value has been created or destroyed.

Company creates value when  $MVA > 0$  that is when the market value of capital exceeds the capital invested. A negative value for MVA proves that the provisions concerning the ability of management to use efficiently the capital are unfavorable. The link between EVA and MVA is that MVA is the present value of all the future EVAs a Company is expected to generate, discounted at the WACC.

$$\text{Market Value Added (MVA)} = \text{PV (EVA)}$$

Theoretically, MVA is equal to the present value of all future EVAs. On the assumption that there will be no future growth in the current EVA, or that the expected future growth in EVA will be at a constant rate,  $g$ , the theoretical MVA can be calculated as perpetuity. The result shows that MVA is a multiple of the current EVA. If no future growth in EVA is expected, the theoretical MVA can be calculated as follows:

$$\text{MVA} = \text{PV (future EVA)}$$

$$\text{Market Value Added (MVA)} = \text{current EVA} / \text{WACC} \quad (2)$$

Where,

PV: Present Value

EVA: Economic Value Added

WACC: Weighted Average Cost of Capital

## 2.8 Financial Ratios

Financial ratios are used to supplement the analysis and decision making process by allowing easy measurement and interpretation of important indicators within, and across, the key statements. An analyst uses financial ratios to understand the relationships among various financial statement accounts. These ratios yield information about a Company's ability to meet short term obligations on time, remain solvent over a long period, manage assets, and operate efficiently.

The use of ratios and margins in financial analysis enables the analyst to interpret the financial situation of an enterprise in a more meaningful manner than by just looking at the absolute numbers. Financial ratios consider the relationships that exist within various accounts and, thus, facilitate an understanding of a Company's financial condition with greater depth and clarity. Ratio analysis is another tool that helps to identify changes in a Company's financial situation. A single ratio is not sufficient to adequately judge the financial situation of the Company. Several ratios must be analyzed together and compared with previous-year ratios, or even with other Companies in the same industry. This comparative aspect of ratio analysis is extremely important in financial analysis.

It is important to note that ratios are parameters and not precise or absolute measurements. Thus, ratios must be interpreted cautiously to avoid erroneous conclusions (Citibank, 1995; Walsh, 2003; DiGiacomo & et al, 2003; Callahan & et al, 2007; Mladjenovic, 2006; Banks, 2007; Marion, 2008; Crosson & et al, 2008; The Editors of Career Press, 1998; Siegel, 2007; Bodie & et al, 2004; Groppelli & Ehsan, 2000).

## 2.9 Types of Financial Ratios

There are several types of traditional ratios or relationships. They are categorized as follows:

**Liquidity ratios** - measure the ability of the enterprise to meet its short-term financial obligations in a timely manner

**Leverage ratios** - measure the solvency position or viability of the enterprise on a long-term basis

**Activity ratios** - measure how effectively the Company's assets are managed

**Profitability ratios** — measure the efficiency of operations within the enterprise

### **2.9.1 Liquidity Ratios**

Liquidity ratios measure the relationship of the more liquid assets of an enterprise (the ones most easily convertible to cash) to current liabilities.

The most common liquidity ratios are:

- 1) Current ratio
- 2) Quick ratio

#### **2.9.1.1 Current Ratio**

((Quantitative Relationship between current assets and current liabilities))

The current ratio is frequently used to measure liquidity because it is a quick and easy way to express the quantitative relationship between current assets and current liabilities. It answers the question: "How many Rial in current assets are there to cover each Rial 1.00 in current liabilities?" The current ratio is the ratio of current assets to current liabilities:

$$\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$$

A rule of thumb is that a current ratio close to 2.0 is good, but this is a much generalized statement.

#### **2.9.1.2 Quick ratio**

Quick ratio is also known as liquid ratio or acid test ratio. Current ratio provides a rough idea of the liquidity of a firm so subsequently a second testing device was developed named as acid test ratio or quick ratio. It establishes relationship between liquid assets and current liabilities. In many businesses a significant proportion of current assets may comprise of inventory. Inventory, by nature, cannot be converted into ready cash abruptly. The term liquid assets does not include inventory.

$$\text{Quick ratio} = (\text{Total Current Assets} - \text{Inventory}) / \text{Current liabilities}$$

Thus eliminating inventory from current assets and then doing the liquidity test is measured by this ratio. The ratio is regarded as an acid test of liquidity for a Company. It expresses the true working capital relationship of its cash, accounts receivables, prepaid and notes receivables available to meet the Company's current obligations.

## **2.19.2 Profitability Ratios**

Companies are in business for the purpose of making profits. If a Company accumulates considerable losses year after year, it will not stay in business for long. Profits are the driving force of growth and are the main source for repaying loans, making new investments, and providing an adequate return to owners so they retain their interest and financial backing.

Profits are also important for another reason — they measure the relative success of a Company and can readily be compared to other Companies and to the capital market. Therefore, profits reflect (and profit ratios measure) the effectiveness and efficiency of management. The common profitability ratios are:

- 1) Return on Sales
- 2) Return on Assets
- 3) Return on Equity

### **2.9.2.1 Return on Sales (ROS)**

((Rial profit per Rial 100 in sales))

The return on sales ratio (profit on sales) measures how many dollars of profit are made for every Rial 100 in net sales. The figure is a percentage and is calculated as:

$$\text{Return on Sales (ROS)} = \text{Net Income} / \text{Net Sales}$$

### **2.9.2.2 Return on Assets (ROA)**

((Relationship between profits and resources invested))

Return on assets is a good indicator of the productivity of the firm and of management's abilities and efficiency. The index measures the relationship between profits and total resources invested. Return on Assets (ROA) is a measure of how effectively the firm's assets are being used to generate profits. It is defined as:

$$\text{Return on Assets} = \text{Net Income} / \text{Total Assets}$$

### **2.9.2.3 Return on Equity (ROE)**

((Return on Capital and Profits generated by each Rial 1 invested))

Return on equity (ROE) measures the profits generated by each rupee accumulated in the business by stockholders. Return on equity is defined as follows:

**Return on Equity = Net Income / Shareholder Equity**

Or

$$\text{ROE} = \frac{\text{Net Income after tax}}{\text{Shareholder Equity}}$$

Determining return on equity is important for measuring the degree to which the profits of the firm provide a return to the shareholders. The figure can be compared to a marginal investment rate in the community, such as a time deposit rate in a local bank. ROE measures whether the enterprise can produce an amount sufficient to cross this hurdle rate and provide an incentive to take on additional risks of equity investment.

If the ROE figure is very low in comparison to time deposit rates, the owner is further ahead to liquidate the Company's assets and deposit the money in a bank. In these situations, the creditor should question the owner's commitment to the firm, especially if the financial situation deteriorates further. These will enable the Company to grow, given suitable market conditions, and this in turn leads to greater profits and so on. All this leads to high value and continued growth in the wealth of its owners.

At the level of the individual business, a good return on equity will keep in place the financial framework for a thriving, growing enterprise. At the level of the total economy, return on equity drives industrial investment, growth in gross national product, employment, government tax receipts and so on. It is, therefore, a critical feature of the overall modern market economy as well as of individual Companies.

### **2.9.3 Return on Investment (ROI)**

The generic phrase 'return on investment' relates to one of the most important concepts in business finance. Each rupee of assets has to be matched by a rupee of funds drawn from the financial markets. These funds have to be paid for at the market rate. Payment can come only from the operating surplus derived from the efficient use of the assets. It is by relating this surplus to the value of the underlying assets/funds that find a measure of return on investment. If this return on investment is equal to or greater than the cost of funds, then the business is currently viable. However, if the long-term rate is less than the cost of funds, the business has no long-term future. Return on investment (ROI) is computed as:

$$\text{ROI} = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

#### 2.9.4 Earnings per share (EPS)

'Earnings per share' is one of the most widely quoted statistics when there is a discussion of a Company's performance or share value. While the absolute amount of earnings per share tells nothing about a Company's performance, the growth in EPS over time is a very important statistic. Many chairpersons stress it as a prime target in annual reports. Furthermore, growth in earnings per share has a significant influence on the market price of the share. EPS is calculated by the following formula:

$$\text{Earnings Per Share (EPS)} = \text{Net Earnings} / \text{Number of Outstanding Shares}$$

Growth in EPS tells more about a Company's progress than growth in absolute profits. Growth in profits can result from many things. For instance, a Company could acquire another for shares and thereby increase its profit. However, if the percentage increase in profit is less than the percentage increase in the number of shares, earnings per share will fall even with higher profits. Not only is growth in EPS most important, so also is its' stability. Investors look closely at the quality of earnings. They dislike the erratic performance of Companies with widely fluctuating profits. A high-quality rating is given to earnings that are showing steady, non-volatile growth.

#### 2.9.5 Price-to-Earnings ratio (P/E)

The price-to-earnings ratio can also double as a profitability ratio because it's a common barometer of value that many investors and analysts look at. The formula is:

$$\text{P/E ratio} = \frac{\text{Price per Share}}{\text{Annual Earnings per Share}}$$

Or

$$\text{P/E ratio} = \text{Market price per share (MPS)} / \text{Earnings per share (EPS)}$$

Or

$$\text{P/E ratio} = \frac{\text{price (per share)}}{\text{Earnings per share (EPS)}}$$

## 2.9.6 Leverage ratios

The term "leverage" refers to how much debt a firm has in the capital structure. Leverage ratios compare this debt to other items on the income statement or the balance sheet. It also determines whether interest payments that must be made are covered by current earnings.

Leverage ratios are important in determining the likelihood of the firm paying its debt obligations. The more debt a firm has relative to its assets, income producing ability, and equity, the more likely it is to have difficulty meeting those obligations.

### 2.9.6.1 Debt Ratio (DR)

Debt ratio indicates what proportion of debt a Company has relative to its assets. The measure gives an idea to the leverage of the Company along with the potential risks the Company faces in terms of its debt-load. This ratio is computed as:

$$\text{Debt-to-Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

A debt ratio of greater than 1 indicates that a Company has more debt than assets; meanwhile, a debt ratio of less than 1 indicates that a Company has more assets than debt. Used in conjunction with other measures of financial health, the debt ratio can help investors determine a Company's level of risk.

## **2.10 Limitation of Financial Ratio Analysis**

Although the financial ratio analysis of the Company is often used by several Companies in order to measure their performances, it does not mean that the financial ratio analysis is the best measurement to determine the performance of the Company.

Warsono (2003) stated that financial ratio analysis has six limitations:

1. The results should be compared with other Companies' financial ratio analysis.
2. The ratios appear from the financial ratio analysis calculation are only estimation, because the data found is not based on the research done within the whole Company's condition and performance.
3. The differentiation of implementing accounting standard within Companies can influence the results in measuring the financial ratio analysis.
4. Financial ratio analysis only can give guidance of the financial condition of the Company.
5. Some Companies experience fluctuation in its financial condition, so the balance will differ along the year where the report is prepared.

With so many limitations in measuring the financial performance using financial ratio analysis, many experts in management tried to find the new method in calculating the financial performance. And finally they found the exact method called EVA (Economic Value Added) method.