

# IMPLEMENTATION OF ECONOMIC VALUE ADDED AND MARKET VALUE ADDED ANALYSIS AS VALUATION TOOLS OF INVEST FEASIBILITY

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**Abstract.** For the investors, financial statement is a benchmark of investors in assessing the company's performance. In fact, investors are not always receiving the accurate company's financial statements information and its levels of fairness are in doubt. The financial statement analysis with using financial ratios is not enough. The investors may need to use alternatives financial statement analyses techniques that reflect the actual company's performance. Therefore, both of the investors and the prospective can use Economic Value Added (EVA) and Market Value Added (MVA) analysis. With these technical analyses, the investors may know the company's performance where they are invested or to be used as a place to invest whether it has value added or not. With the results of these analyses, it is the expected for the investors to be more confident in making decision whether to buy, sell or hold the ownership in the company.

Keywords: Economic Value Added, Market Value Added, Investment

## I. INTRODUCTION

The investors making investment in the company to get the yields purposed that were in accordance with their expectations. Therefore, before investing, they evaluate the revenue that is expected to be obtained from the investment. This means that investors should conduct an analysis on the company's financial statements to be selected as a capital investment. After becoming the investors they are monitoring the companies by analyzing financial statements published by companies or by financial news in various newspapers, magazines and even can be accessed via Internet at the company's website or at the Indonesia Stock Exchange specialized for companies that have gone public.

Financial report is a benchmark of investor in evaluating company performance. "The financial statements are the result of the accounting process that can be used as a tool for communication between financial and activity data of a company with the parties concerned with the data or activities of the company".[1]

In the Statement of Accounting Principles Board No. 4 (New York: AICPA, 1970), par 41 stated that:

"The financial statements are the primary tools through financial information communicated to the outside parties of company. This report provides a history of continuous quantified in terms of money regarding economic resources and obligations of a company's business and economic activities that transform resources and this obligation. "[37]

In fact, investors do not always receive the accurate information of company financial statements and the level

of its fairness is in doubt. In this case the investor must be careful in conducting the analysis. During this time, analysis of financial statements is more directed at the financial ratios that include liquidity ratios, asset management, debt management and profitability ratios. Unfortunately, financial ratios also have weaknesses because management manipulates financial statements to perform Window Dressing technique. The financial statements became as if reflecting the company in better condition but the real condition was not like that.

The financial analysts seek alternative analysis techniques of financial statements that reflect the actual performance of the company. Joel Stern and Bennett Steward, founder of the consulting firm Stern Stewart & Company to develop their own concept (protected copyright law), known as Economic Value Added (EVA) and Markets Value Added (MVA).

The essence of MVA concept is the difference between the market value of the company's shares with the book value of the company. MVA indicates the size of the company's performance from the beginning of the firms' establishment based on the stock values. If MVA measure the overall performance, then the concept of EVA measure the effectiveness of the company's performance in any given year only. EVA is an estimate of the economic profit of the company in concerning years and it is very much different from the concept of net profit after tax (Earnings After Tax-EAT).

By the both of alternative concept, investors are expected not to get traps in the net profit after tax (level of company profitability), the beauty of financial ratios and

dividend per share. Both of these concepts will be more readily applied to go public companies in which the shares are traded on the stock exchange because of the extent of the access of investors to determine the company's financial statements.

## II. THEORETICAL FRAMEWORK

### A. Financial Statements

Regarding the meaning of financial statements there are some opinions expressed by the experts. "The financial statements is to provide an overview of the financial situation of a company, in which the balance sheet reflects the value of assets, liabilities and equity at a certain periode and the income statement reflects the results that have been achieved during the certain period." [3]

According to Myer in his Financial Statement Analysis states:

"That the meant of financial statements are two sheets compiled by the accountant at the end period for a company. Both of the sheets are the balance sheet or financial position and the income sheet or profit and loss sheet. In recent times this has become a habit for the companies to add third sheet that is surplus sheet or retained earnings. "[19]

The meaning of financial statements according is: [6]

"The financial statement is a summary of a recording process, a summary of the financial transactions that occurred during the concerned financial year. The financial statements prepared by management with the aim to account for the tasks assigned to him by the company owner. Besides, the financial statements may also be used to meet other purpose that is as a report to the outside parties of the company. "

Based on above definition, it can be concluded that the financial report is a report that provides financial overview or condition of a company that can show the total assets, liabilities and capital expressed in terms of the balance sheet and the yield during the accounting period, which is expressed in the income statements, where the number is obtained through the process of recording financial transactions, in order to account for the tasks assigned to management by the owner of the company.

In order to the financial statements readers have clear overview; the financial statements prepared should be based on common accounting principles. In accordance with SFAS No. 1 (2004: 1.2) the complete financial statement consists of the following components

1. Balance Sheet
2. Income statement
3. Changes in equity statement
4. Cash flows statement, and
5. Notes of the financial statements

It is also mentioned in IAS (2004: 2) that:

"The complete financial statement usually includes of balance sheet, income statement, and statement of changes in financial position (which may be expressed in various ways, for example, a cash flow statement or fund flows statement), notes

and other statements and explanatory material that are an integral part of the financial statement. Besides, it also includes schedules and additional information relating to the statement, for example, the financial information of industry segments and geographical as well as the disclosure of the effect of price changes. "

The preparation of financial statements is conducted periodically and periods that used are annual starting on January 1 and ends on December 31. The period like this is called the period of calendar year. In addition to the calendar year, the accounting period can also be started from a date other than January 1. The term of accounting period is often replaced by the term of financial year.

### B. Purpose of Financial Statements

Basically purpose of financial statements is to provide financial information of a company that will be used by the concerned parties as a material consideration in making economic decisions, under SFAS No. 1 (2004: 1.2) stated:

"The purpose of financial statements for the general purpose is to provide information about the financial position, performance and cash flows of companies that give benefit to the majority of reports users in order to make economic decisions and demonstrate accountability (stewardship) of management over the use of resources entrusted to them."

Meanwhile, according to JopieJusuf in his book Credit Analysis for Accounts Officer stated that the purposes to hold the financial statements are:

1. To provide reliable financial information about the assets and liabilities as well as the capital of a company.
2. To provide reliable information about the changes in net assets (assets minus liabilities) of a company arising from business activities in order to gain profit.
3. To provide information that helps financial statement users in assessing the company's potential in generating profits.
4. To provide other important information about changes in assets and liabilities of a company, such as information on financing and investment activities.
5. To express as far as possible any other information relating to the financial statements those are relevant to the needs of users, such as information on the accounting policy of the company.

So by looking at the description above, that the purposes of financial statements are to provide information on the financial condition of a company in the form of balance sheet, income statement and other reports required by the users in making a decision.

### C. Financial Performance of The Company

Company as an organization has certain objectives that show a variety of things to do to meet the interested parties, including investors. Before deciding to invest in a particular company, the investor must measure whether the objectives set by the company has been reached or not. However, this measurement is not easy to do because it's not just about the financial aspects but also non-financial of

the company management. Measure of financial performance is only one way to find out whether a company has run operations in accordance with the plan or not.

Measurement of financial performance arising as a result of the decision process management company, is the most complex and difficult matters as it concerns the effectiveness, capital utilization, efficiency, and profitability of the company's activities and concern values and security of various claims arising to the third party of company.

States that "Financial performance is a tool to measure financial performance through its capital structure". The company performance according to is the "achievements of the company that are rated on the ratio of the current to the past and to the future". [23]

#### D. Purposes of Financial Performance Measurement

States that the purposes of measuring the financial performance are as follows: [31]

1. To determine the liquidity, which is the company's ability to meet its maturing short term liabilities.
2. To determine the solvency level, which is showing the company's ability to meet financial liabilities if the company is liquidated either short term liabilities or long-term liabilities.
3. To determine the rentability level, which is shows the company's ability to generate profits for a certain period.
4. To determine the business stability, this is the company's ability to do business stably measured by taking into account the ability to pay dividend regularly to the shareholders without any financial obstacles or crisis.

### III. MARKET VALUE ADDED

The main targets of the most companies are to maximize the wealth of their shareholders. These targets will certainly give benefits to the shareholders but will also help to ensure that the limited resources allocated efficiently, which will provide economic benefits. Shareholder's wealth will be maximized by increasing the shares market value of a nominal amount of equity capital that has been provided by the shareholders.

According to G. Bennett Stewart III in book of *The Quest for Value* mentions that Market Value Added-MVA is "the difference between the shares market value of the company and the amount of equity capital that has been provided by the shareholders". The higher MVA, the better works done by the manager for the firm's shareholders so that the companies are deserve to be the place to invest. The MVA basic formula is as follows:

MVA = the shares market value - Equity capital provided by shareholders

MVA = (Outstanding shares) (Stock price) - Total common stock equity

The higher MVA, the better work done by the manager for the firm's shareholders so that the companies are deserve to be the place to invest.

#### A. Economic Value Added (EVA)

The company valuation is an important step that should be taken by investors before they invest in a company. Through the company valuations, investors can choose what steps should be taken in a company if he would buy, hold or sell their equity.

"As long as this has not felt the existence of valuation method that accurately and comprehensively able to provide a reasonable valuation of the company's condition" [25]. For this reason, G. Bennett Stewart III, partner Joel Stern founder of consulting firm of Stern Stewart & Company pointed out the concept of Economic Value Added which is contained in his book *The Quest for Value*. "EVA is a residual income measure that subtracts the cost of capital from the operating profits generated in the business". So EVA is the remaining residual income from net operating profit after subtracts the cost of the whole capital. [25]

Argues that EVA is "a method of measuring the real operating profit of the company, which makes the difference between EVA and the traditional measurement that is the cost of capital in EVA". The almost same opinions are expressed by in *World Economic Digest*, "EVA is a financial method that gives instructions on how the company's capital cost reduction can be done" argue that: [39]

"EVA is based on the idea of economic benefit, which states that wealth is only created when a company covers the operating costs and capital costs. In this narrow sense, EVA is really just an alternative way to value company's financial business".

Meanwhile argue that: [6]

"EVA is an estimate of the actual economic profit of the business for the concerned year, and very much different from accounting profit. EVA reflects the residual profit remained after the cost of the whole capital, including equity capital has been subtracted while accounting profit is determined without charging to equity capital".

So far, the investors often find difficulty whether to buy the ownership of a company or sell it. This is because investors are trapped on financial ratios primarily earnings per share, not to pay attention to the aspect of ability to pay dividends and the value of the company. Besides, the company management sometimes do window dressing to cover the company's performance which is not good so the financial statements look better than the actual condition. In his book [39] argues that the "value creating companies, however, pursue them not for their own sake but because long-term value creation for their shareholders is not possible otherwise." So it's clear that the company prioritizes how management capability creates value. Value creation as the main purpose of the company is only a beginning. Managers also need to create growth / their progress in achieving them.

From the opinion above that creating value is to bring changes to the company in the global era like now, and then it is raised the concept of performance measurement that is EVA. The principle of this analysis is "To create

value for shareholders, the company must get a return on capital that exceeds the cost of capital"[39].

*B. Advantages and Disadvantages of EVA*

The used method can not be split because of the advantages of the method. The advantages of EVA [25]:

1. EVA are truly complete concept, summarizes the traditional ratios that have been used such as ROI and ROA. The concept is seeing something operationally, assets that are not yet in operation, not used as a component, while the already in operation is calculated the value added.

1. Because it involves operational aspects, EVA as cited above as the driver of employee empowerment. They demanded more willing to take decisions that will give added value, with the idea of investment returns must be greater than the cost of investments and various cost of capital.

The advantages of EVA [34] in [22] are:

1. EVA focuses the valuation on value added by calculating the cost of capital.
2. The concept of EVA is a tool to measure the performance of companies that pay attention to the expectations of the funders (creditors and investors) fairly.
3. In the EVA calculation, it does not require comparative data (e.g., the other companies' data) as required in other valuation concept that using ratio analysis.
4. The EVA concept is a practical measure, easily calculated, and easy to used, so it can accelerate the process of business decision making.

Another advantages of EVA expressed [20], among others, "EVA explicitly take into account the cost of capital and perform a number of adjustments to the financial statements to be more relevant". Based on EVA, the company management is expected to define a strategy to enhance shareholder value.

Instead EVA is has no disadvantages at all. Some of EVA disadvantages are: [20]

1. EVA contains an element of luck or high and low of EVA can be influenced by capital market volatility.
2. Conceptually EVA is superior to traditional accounting measure, but in practice it may not necessarily be applied easily. Determining the cost of capital stock is sufficiently complex that they need the depth analysis of techniques to estimate the cost of the share capital.

The other disadvantages according to Roy Sembel, an analyst of investment and finance, [25] : "using the EVA approach in volatile market situation, in the short term is often questionable validity. The result can not reflect the total return shareholders in the long term".

*C. Benefits of EVA as Appraiser of Company Financial Performance*

Some of the benefits that can be obtained from EVA [22] :

1. EVA as a performance evaluator company where focus of performance valuation is the value creation.
2. Performance valuation by using EVA method led to the

attention of management in accordance with the decision of shareholders.

3. By EVA, managers will think and act just like shareholders, namely choosing investments that maximize returns and minimize the level of capital costs that would be the maximum value of the company.
4. EVA makes managers focus attention on activities that create value and enable them to evaluate the performance based on the criteria of maximizing the value of the company.
5. EVA can be used to identify activities or projects that provide higher return than the cost of capital.
6. EVA will cause the company to pay more attention to its capital structure policy.

Thus the concept of EVA as a measurement of company financial performance is directly indicates how much the company has created value for the investors.

*D. Calculation of EVA*

At [25] EVA calculation based on:

"The data are publicly available (annual reports or independent auditor's report). In simple terms, EVA value derived from operating income subtracted the cost on invested capital, which is also called the cost of capital, both within the company as a whole, the business unit level, factories, offices or assembly lines. EVA approach has incorporated all the elements in the profit or loss and balance sheet of the company. Because of that EVA is also known as the measurement of "performance factor total".

Based on the meaning of calculations above, the basic formula of EVA is as follows:

$$EVA = NOPAT - \text{Cost of Capital}$$

$$\text{Cost of Capital} = WACC \times \text{Invested Capital}$$

Where:

1. NOPAT (net operating profit after tax)
2. WACC (weighted average cost of capital)

*E. NOPAT*

If the two companies had a net earnings after tax (EAT) with the same amount it is not necessarily both of them have the same company operating performance. This can be influenced by the different amount of debt interest expense. The companies that have a lot of debt is certainly the operating profit must charge the greater debt interest. Net earnings after tax are certain to be an important, but the net earnings did not always reflect the true performance of the company's operations or the effectiveness of the company's management. A better measurement for comparing the performance of management is the net operating profit after tax (NOPAT).

"NOPAT or net operating profit after tax before interest expense is the sum of operating income, interest income, expense or income tax of 30%, interest expense, equity in net income or net loss of associated companies, profit or losses of rates, and other profit or losses related to the company's operations". [25] Meanwhile, [38] "NOPAT is profits derived from the operation of the company after

subtracted income taxes, but including financial costs and non-cash bookkeeping entries such as depreciation costs”.

F. Cost of Capital

EVA concept is a new concept that originated from the existing concept, i.e. Cost of Capital, which is a concept to determine how the costs will be incurred by the company in connection with the purchase of goods and capital or working capital. If reviewed of the owners of capital, this cost is expected income as remuneration on the funds invested.

The cost of capital for any investment, whether in a project, a business division, or an entire enterprise, is the rate of return expected by providers of funds. So it can be concluded that the cost of capital is based on the expected return and not on historical returns and the cost of capital is the opportunity cost that reflects the expected return of investors from other investments with the perfectly risks.

Costs of capital are “costs incurred by the company on the use of sources of funds to finance investment activity”[19]. Meanwhile, the definition of the overall cost of capital is the “ an average cost of capital of each of the securities that used to finance the company”[19].

There is the possibility of a company in terms of financing their operations, just use fully ordinary stock capital. Under these conditions, the cost of capital employed is the rate of return on equity demanded by investors. However, the most companies get a substantial part of the capital not only of the common stock, but also of debt, preferred stock and the issuance of new stock. For these companies, the cost of capital should reflect the average cost of a variety of funding sources that is not only the cost of equity alone.

Costs of capital that used here is “weighted average cost of capital that is calculated proportionally on the use of capital stock, debt or preferred stock”. This concept is known as the Weighted Average Cost of Capital (WACC) [19].

There are three reasons why the cost of capital is very important, that are: [18]

1. Maximize the value of the company are require that costs (including capital costs) is minimized
2. Decision of capital budgeting requires an estimate of the cost of capital
3. Other decisions such as working capital management and leasing need information regarding the cost of capital

The cost of capital is a concept that can determine in real terms of the costs to be charged by the company, as a result of the use of funds. Component of cost of capital consists of:

2. After tax cost of debt,  $K_d (1-T)$

After-tax cost of debt that is showing interest cost to be charged by the company, as a result of the use of funds from the loan by the company subtracted by the tax subtraction occurred. Cost of debt should be subtracted by tax firstly because the cost of interest debt is a tax subtraction.

According to Brigham and Houston (2006: 470), the after-tax cost of debt is calculated by the formula:

$$\text{The after-tax cost of debt} = \text{Interest rate} - \text{tax}$$

$$\begin{aligned} & \text{subtraction} \\ & = K_d - K_d T \\ & = K_d (1-T) \end{aligned}$$

However, the use of this formula will be difficult when the company did not only have the long-term loan in only once. In fact, most companies do more than one loan at the different rate and from the different banks, the period and the date of loans, changes in the loan agreement, as well as currency differences between the report presentation and the contract agreement. So the interest rate that used is the average interest rate. After taxes cost of debt can be formulated as follows: [31]

$$K_d (1-T) = (I (1-T) / P)$$

where:

- K<sub>d</sub> : Cost of debt capital
- I : Interest expense
- T : The tax rate 30%
- P : Average of bank debt

3. Costs of capital of preferred stock (K<sub>p</sub>)

These preferred stocks charged on the company’s liabilities to make the dividends payment to the holder periodically. This type of capital is only taken into account in determining the overall cost of capital when the company issued the preferred stock. These types of capital should be taken into account in determining the overall cost of capital if the company issued preferred stock. The formula of the cost of capital of preferred stock is:

$$K_p = \frac{D_p}{P_p}$$

where:

- K<sub>p</sub> : Cost of preferred stock
- D<sub>p</sub> : Preferred dividends
- P<sub>p</sub> : Current price of preferred stock

4. The cost of common equity capital (K<sub>s</sub>)

The enormous of common stock dividend is not determined at the time when the investor direct funding, but it is uncertain in nature depending on the company’s performance in the future. It is different with debt capital, because it has certainty that the interest rate should be approved. To estimate the cost of common stock capital need an approach based on the rate of return expected by shareholders. That is why it is to determine the cost of common stock capital must be based on the prevailing market value rather than book value. In SWA (2001: 31) the method that used in calculating the cost of common equity is the method of CAPM (Capital Asset Pricing Model) by using the risk-free interest rate of the average interest rate of Bank Indonesia Certificates (SBI).

The variables were observed in the calculation of CAPM approach, among others:

- a. Risk-free interest rate (K<sub>RF</sub>)  
Risk-free interest rate is taken from the average interest rate of SBI for one-year.
- b. Return Individual (K<sub>Ri</sub>)  
It is the stock return over interval time of one month. Calculations by means of the closing market

price on end of trading days this month (Pit) subtracted the closing price on end of trading days last month (Pit-1), then add the dividend and the result is divided by the closing price on end of trading days last month's transactions (Pit-1). It is mathematically written as follows:

$$K_{Ri} = \frac{Pit - Pit + Dit}{Pit - I}$$

Where:

- K<sub>Ri</sub> : The rate of profit stock
- Pit : Price of stock 1 in period t
- Pit-1 : Price of stock 1 before period t
- Dit : Amount of dividends in period t

c. Return Market (K<sub>M</sub>)

It is a return of the market portfolio using Composite Stock Price Index (CSPI). Determination of return market was using the average CSPI per month for each year. While the market rate of return is calculated using the formula:

$$K_M = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}}$$

where:

- K<sub>M</sub> : Return Market
- IHSG<sub>t</sub> : Composite Stock Price Index at month t
- IHSG<sub>t-1</sub> : Composite Stock Price Index before month t

d. Systematic Risk (β)

It is the risk associated with the market. One thing that is very useful from the CAPM model is that the beta of stock portfolios is a weighted average of the various beta of each other stock. Beta is used to compare the magnitude of the systematic risk of the stock with each other. Beta is formulated by:

$$\beta = \frac{\sum [(K_{Ri} - \bar{K}_{Ri}) (K_M - \bar{K}_M)]}{\sum (K_M - \bar{K}_M)^2}$$

where:

- K<sub>Ri</sub> : Profitability of stocks / Return Individual
- $\bar{K}_{Ri}$  : Average of stock profitability
- K<sub>M</sub> : Profitability of market
- $\bar{K}_M$  : Average of market profitability

After doing the calculations on individual returns, market returns and assessing beta risk, then the results obtained are used in the calculation of CAPM.

Valuation of common stocks cost with CAPM method, according to Brigham and Houston (2006: 475) are formulated in the following equation:

$$K_S = K_{RF} + (K_M - K_{RF}) \beta$$

where :

- K<sub>S</sub> : The cost of common equity capital
- K<sub>RF</sub> : The level of risk-free profits
- K<sub>M</sub> : The level of market profits
- K<sub>M</sub> - K<sub>RF</sub> : The market premium is the market profit rate above the level of risk-free profits

β : Beta of individual stocks

Although it looks very accurate, CAPM approach

obviously has the disadvantages [6]. The disadvantages of the CAPM are:

5. Not considering the risk stand-alone
6. Produce too small cost value of common equity (K<sub>s</sub>)
7. It's hard to get a precise estimate of the inputs required for:
  - a. There is controversy between the use of long-term government bond yields with short term for the value K<sub>RF</sub>
  - b. It is hard to estimate the beta value (β) that expected by investors would be owned by the company in the future
  - c. It is hard to estimate the market risk premium

There are other approaches that could be used in addition to the CAPM approach are as follows:

- a. Approach of Bond Yields Plus Risk Premium  
Analysts who lack confidence in CAPM often use subjective *ad hoc* to estimate the companies cost of common equity, just add the estimated risk premium of 3 to 5 points in the interest rate of long-term debt of those companies, so it can be formulated as follows:

$$k_s = \text{bond yield} + \text{risk premium}$$

Although it did not produce an accurate valuation of equity, this method will just help us to walk in the right direction.

- b. Approaches of Dividend Yield Plus Growth Rate  
In this approach, the cost of common stock value is calculated based on the rate of return on common stock in the form of dividends plus the rate of growth forecasts. According to Brigham and Houston (2006:477), the cost of common stock value is formulated as follows:

$$k_s = \frac{\text{Dividend } (D_1)}{\text{Stock price } (P_0)} + \text{estimated g-value}$$

The growth rate can be based on historical growth rates. However, it will be difficult if economic conditions are in abnormal circumstances. G-value can be calculated by other methods that are calculated by the following formula:

$$g = \text{retention rate} \times \text{ROE}$$

8. payments rate) × ROE

ROE = (profit margin) × (asset turnover) × (equity multiplier)

$$= \frac{\text{Net income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Common stock}}$$

It makes this method different is calculation on the issuance of new common stocks whereas the costs of common stock emission are also taken into account so that the formulas cost of new stock to be as follows:

$$K_s = \frac{(D_1)}{P_0(1-F)} + \text{estimated g-value}$$

where F is the cost of emissions (in percentage).

Similarly in the CAPM method when calculating β, the underlying disadvantages of this method is the

difficulty of determining the value of the expected growth (g) appropriately.

G. Capital Structure

According to Weston and Copeland, capital structure or capitalization is permanent financing consists of long-term debt, preferred stock and stockholders' equity. So the capital structure of a company is only part of the financial structure. This is supported by Weston and Brigham that cited by Sirait (1994:150): "The targeted capital structure is a mix or blend of debt, preferred stock and common stock desired by the companies in their capital structure". "Each of these companies has an optimal capital structure, defined as a combination of debt, preferred stock, and common stock, would minimize the weighted average cost of capital (WACC). [6]

From some meanings above it can be taken a conclusion of its meanings, capital structure includes long-term debt and equity capital.

The importance of capital structure is mainly due to the different characteristics between each type or source of these capitals, which in general these differences have an influence on two important aspects in the life of company to the company's ability to generate benefit of the company, and to the company's ability to pay for long-term liabilities.

From the above definition it can be said that the cost of capital of a company can be influenced by capital structure, therefore the management of capital structure is an important part of the company's financial management.

H. Weighted Average of Capital Cost (WACC)

The definition of WACC is the "minimum return rate weighted by the proportion of each financing instrument in the capital structure of companies that must generated by the company to meet the expectations of creditors and investors or shareholders".[30]

The data that used in the calculation of WACC is: "Tax rate (T) 30%; cost of debt (calculated by using the interest rate of long-term and short term loans charged on each company); cost of equity, which is calculated based on the CAPM method (capital asset pricing model) by using the risk-free interest rate of the average interest rate of Bank Indonesia Certificates 3 months of 2001. Beta, as an indicator of the volatility of the company's risk relative to the market obtained from Bloomberg. The beta data is then normalized using method that used by Gerald I. White at all, in his book Financial Statements. Meanwhile, premium market risks as an additional risk factor of the company, because financing by the issuance of shares then it agreed at 6%".

WACC consists of component cost of debt, cost of preferred stock and common stock or the cost of the overall cost of capital or after determining the cost of equity, cost of debt, and the cost of preferred stock, the weighted average of cost can be calculated. [6] Calculate WACC with the following formula:

$$WACC = W_d K_d (1-T) + W_p K_p + W_c K_s$$

Where :

$K_d (1-T)$  : Cost of Debt Capital after tax

$K_p$  : Cost of Preferred Stock  
 $K_s$  : Cost of Common Equity  
 $W_d, W_p, W_c$  : Weight of each after-tax cost of debt, preferred stock and common equity.

I. Invested Capital

Invested Capital "is the reorganization result of the balance sheet to see the amount of capital invested in the company by creditors and shareholders, as well as how much capital invested in operational and non-operational activities" [30]. Meanwhile, Invested Capital is "the sum of all companies loan out of non-interest short-term loans".[18]

The meaning of Invested Capital is as follows: [30] "Invested Capital can be calculated from the amount of short term bank loans, current maturity of long-term debt (part of bank loan or lease or long-term bonds with a maturity of one year), long-term debt, deferred taxes liabilities, other long-term liabilities, minority interest on net assets of subsidiaries and equity".

J. Valuation of EVA

EVA size or condition can be positive neither negative. [18], states that:

1. Positive EVA means that a company earns more than the cost of capital, it can add to profits of EVA, if to further increase the capital base and maintain the pace of the profits.
2. Negative EVA means that companies gain less than the cost of capital, this means the company failed to increase the profits of capital base and in making new investments, which also further acquire the smaller capital.

This is made clear by [18], as follows:

1.  $EVA > 0$  means add value to the business (company)
2.  $EVA = 0$  means economically breakeven
3.  $EVA < 0$  means no provide value added to the company, because the available profit could not meet the expectations of investors

IV. RESEARCH METHODS

This is presenting the financial statements of PT. Aneka Tambang Tbk for three consecutive years, which are 2010, 2011 and 2012. These financial statements will be the source of the data in the calculation of Market Value Added (MVA) and Economic Value Added (EVA).

With the data from the financial statements, the researchers presented the results of the calculation of Market Value Added (MVA) and Economic Value Added (EVA) for three consecutive years from 2010 to 2012.

By presenting the results of the calculation of Markets Value Added (MVA) and Economic Value Added (EVA) in accordance with the existing theory, the investor or prospective investor is expected to know the condition of the company's fundamentals and deciding exactly whether to buy, maintain and sell their ownership in the company at the next time.

- a. The units of analysis.

The unit of analysis of this study is the financial statement of PT. Aneka Tambang Tbk for year of 2010, 2011, and 2012.

- b. The logical relationship of data and research propositions.

The logical relationship of data and research propositions occurred when relevant data were collected to examine the propositions. Table 1 explains the logical relationship of data and propositions.

- c. Criteria to translate research findings.

In this study, the end goal is the result of the calculation of Market Value Added (MVA) and Economic Value Added (EVA) as well as the feasibility of the company into a safe and profitable investment for investors and potential investors.

For that the criteria that used are as follows:

1. Analyze financial statements of PT Aneka Tambang Tbk with the theory of Market Value Added (MVA).
2. Analyze financial statements of PT Aneka Tambang Tbk with the theory of Economic Value Added (EVA).
3. The results of MVA and EVA calculation in accordance with the existing theory may be used as a guide for investors and prospective investors to determine the condition of the company's fundamentals and take appropriate decisions whether to buy, maintain and sell their ownership in the company in the future.

#### A. Data and Discussion

Knowing that PT. Aneka Tambang in the presentation of financial statements does not use Generally Accepted Accounting Principles, the researchers tried using analytical techniques as follows:

1. First Steps

Collecting data on study subjects are including data relating to the preparation of financial statements of PT. Aneka Tambang Tbk. in 2010, 2011 and 2012.

2. Step Two

Calculating Market Value Added (MVA) based on data from the financial statements of PT. Aneka Tambang Tbk.

3. Third Step

Calculating Economic Value Added (EVA) with steps as follows:

- a. calculating NOPAT
- b. calculating Cost of Capital where WACC consists of the cost of the use of equity capital, and cost of debt. Cost of equity capital is calculated based on the CAPM method. Debt costs are calculated after subtracted tax of 30%.
- c. calculating Economic Value Added (EVA).

4. Step Four

Analyzing and comparing the value of MVA and EVA for three consecutive years and to determine whether PT. Aneka Tambang Tbk is feasible to be invested based on the MVA and EVA

In technical analysis, the most important is exposure the evidence supports the findings. Because such evidence is the result of a case study that can be accounted for and convince to the reader. After comparing and analyzing to the concept and the reality, it will be concluded

and suggestions that will be presented at the end of the study.

#### B. Market Value Added

Analysis of Market Value Added (MVA) is calculated by comparing the market value of common stock with nominal value. Based on the results of analysis it showed that the Market Value Added of PT. Aneka Tambang Tbk in 2010 to 2012 is great.

In 2010, the number of outstanding stock is 1,907,691,950 shares with the stock market price of Rp3,575.00 so the overall stock market value reaches Rp6,819,998,721,250.00 after subtracted the total nominal share value of Rp953,845,975,000 then MVA in 2010 amounted Rp5,866,152,746,250.00 or about 615% of their nominal value.

In 2011, the number of outstanding stock is 1,907,691,950 shares with the stock market price of Rp8,000.00 so the overall stock market value reaches Rp15,261,535,600,000.00 after subtracted the total nominal share value of Rp953,845,975,000 then MVA in 2011 was Rp. 14,307,689,625,000.00 or about 1500% of their nominal value. Compared to the year of 2010, MVA in 2011 rose by 243.90%.

In 2012, the number of outstanding stock changed after the management of PT. Aneka Tambang Tbk doing stock split so that the number of outstanding stock is 9,538,459,750 shares into the stock market price of Rp4,475.00 so the overall market value of the common stock is Rp42,684,607,381,250.00 after subtracted the total nominal shares value of Rp953,845,975,000 then MVA in 2012 amounted Rp42,684,607,381,250.00 or approximately 4375% of their nominal value. Compared to the year of 2011, MVA in 2012 increased by 291.67% and when compared to the year of 2010, an increase of 711.38%.

#### C. Economic Value Added

To calculate EVA of the company, it was starting with calculate NOPAT (Net Operating After Tax), calculate the variable of WACC (Weighted Average Cost of Capital), which includes the Cost of Equity or the use of equity capital, Cost of Debt or the cost of debt by taking into account the structure of capital invested, The calculation result of EVA components are as follows:

1. NOPAT

From 2010 to 2012, NOPAT increased significantly. The results of NOPAT calculation of PT. Aneka Tambang Tbk from 2010 until 2012 respectively are Rp795,062,722,300.00; Rp1,682,585,529,100.00; Rp4,757,264,074,500.00. In 2001 NOPAT increased by 111.63% from 2010. While NOPAT in 2012 increased by 182.74% from 2011, an increase of 498.35%.

2. WACC

Before calculating WACC, it must be known previously after taxes cost of debt, cost of common equity capital and capital structure. The calculations are as follows:

- a. After taxes cost of debt,  $K_j(1 - T)$

In 2010, the company had interest expense Rp34,484,298,000.00 that amount multiplied by a correction factor for income tax amounted to 70%



and then divided by long-term debt (including matured long-term debt within one year) amounting to Rp2,106,450,000,000.00, yielding Kd (1-T) amounted to 0.011460. In 2011, there was interest expense Rp206,386,327,000.00 with the same correction factor and divided by long-term debt (including matured long-term debt for payment only remained 1 year) that is Rp2,015,150,000,000.00, yielding Kd (1-T) amounted to 0.071692. In 2012, the company had interest expense Rp77,825,357,000.00 with the same correction factor and divided by long-term debt of Rp1,334,960,000,000, yielding Kd (1-T) amounted to 0.040809.

b. Cost of common equity capital (Ks)

In 2010 the company has Ks 0.2073, or 20.73%, consisting of an average of SBI interest rate for 1 year is 8.74%, beta 1.5302 and total market return (Rm) 0.1657. In 2011 the company has Ks of 0.7528, or 75.28%, consisting of an average of SBI interest rate for 1 year is 12.04%, beta 1.8386 and total market return (Rm) 0.4644. In 2012 the company has Ks 0.7043, or 70.43%, consisting of an average of SBI interest rate for 1 year is 8.75%, beta 1.7367 and total market return (Rm) 0.4427.

c. Capital structure

The capital structure of PT. Aneka Tambang consisted of long-term debt and common equity (includes common stock and retained earnings). Capital structure during 2010 to 2012 the company has composition of long-term debt amounted to 0.3944; 0.2377 and 0.0950 while common equity during 2010 to 2012, PT. Aneka Tambang Tbk has composition of 0.6056; 0.7623 and 0.9050 respectively.

With the three components data above, WACC can be known. WACC calculation results in 2010 to 2012 respectively are 0.1255; 0.5739 and 0.6374.

3. Invested Capital

From 2010 to 2012, the capital invested in the company respectively amounted Rp5,002,746,308,000,00; Rp5,616,562,475,000,00 and Rp9,683,501,272,000,00.

EVA calculation results of PT. Aneka Tambang, Tbk obtained respectively from 2010 to 2012 are Rp144,499,728,695.84; -Rp1,636,461,901,369.99 and -Rp1,452,611,060,531.21.

From the results of Market Value Added analysis, shows that PT. Aneka Tambang has a very good selling point. The reason is quite simply because the net income after tax and net operating profit after taxes (NOPAT) produces a positive number and each year also increased. Based on this analysis, it is reasonable if investors expectation on PT. Aneka Tambang Tbk so great.

However, the results of Economic Value Added (EVA) analysis showed different results. EVA value in 2011 and 2012 showed a negative number to a very large value more than 1 trillion rupiah. A positive number is only achieved in 2010, the year in which EVA value reached Rp144,499,728,695.84.

Based on the calculation of two analyzes above, PT. Aneka Tambang has no added value. Although profitability is increasing, the amount of profit is not in accordance with the costs incurred by the investor to gain ownership of PT. Aneka Tambang Tbk. The calculation results MVA PT. Aneka Tambang is quasi numbers that do not show the achievements and the company's ability to meet the investors expectations, but it only shows the high expectations towards PT. Aneka Tambang Tbk.

## V. CONCLUSION

Based on the analysis performed on the data obtained using the existing theory of literatures, it could be concluded regarding financial performance of PT. Aneka Tambang Tbk from 2010 to 2012.

Valuation reports of financial performance using EVA analysis tends to yielding negative values whereas only in 2010 that reaching positive value. But in 2011 and 2012, the EVA value was negative with significant amount that reached minus more 1 trillion rupiah. This is due to the high costs of capital but not counterbalanced by the ability to recover the obtained costs of capital. Overall it can be said, the company's performance based on the EVA analysis, was decreased.

However, it can not be avoided because the high cost of capital due to higher cost of common equity. The high beta coefficient has made cost of common equity becomes high. High value of beta reflects the level of profit expected by the investors was so great. Investors put too high expectations on the business world, especially on PT. Aneka Tambang Tbk.

This is shown by the rising of stock price of PT. Aneka Tambang Tbk from 2010 until 2012. Although the management has doing stock-split, stock price is still quite high. MVA analysis reinforces the fact that where the value created so much higher than the nominal value.

The high value of MVA does not simply show the company had good prospects. The increase of MVA value is so rapid, it raises investment risk is so high that dangerous for investors because they are trapped on the increase in stock value and recorded operating profit. EVA analysis on the financial statements of PT. Aneka Tambang Tbk has shown otherwise. The management of PT. Aneka Tambang unable to create business value or the income generated does not meet the expectations of investors.

Based on the analysis above, investors should not invest in PT. Aneka Tambang Tbk because the risk is too high. For investors who already have shares in the company is better to sold them.

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