

**THE ANALYSIS OF THE RELATIONSHIP BETWEEN EVA
(ECONOMIC VALUE ADDED) AND MVA (MARKET VALUE
ADDED) AT MANUFACTURE INDUSTRY**

A Thesis

Presented as Partial Fulfillment of the Requirements
To Obtain the Bachelor Degree in Accounting Department



SENDY BAYU AJI

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**DEPARTMENT OF ACCOUNTING
INTERNATIONAL PROGRAM
FACULTY OF ECONOMICS
ISLAMIC UNIVERSITY OF INDONESIA
YOGYAKARTA**

2007

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By

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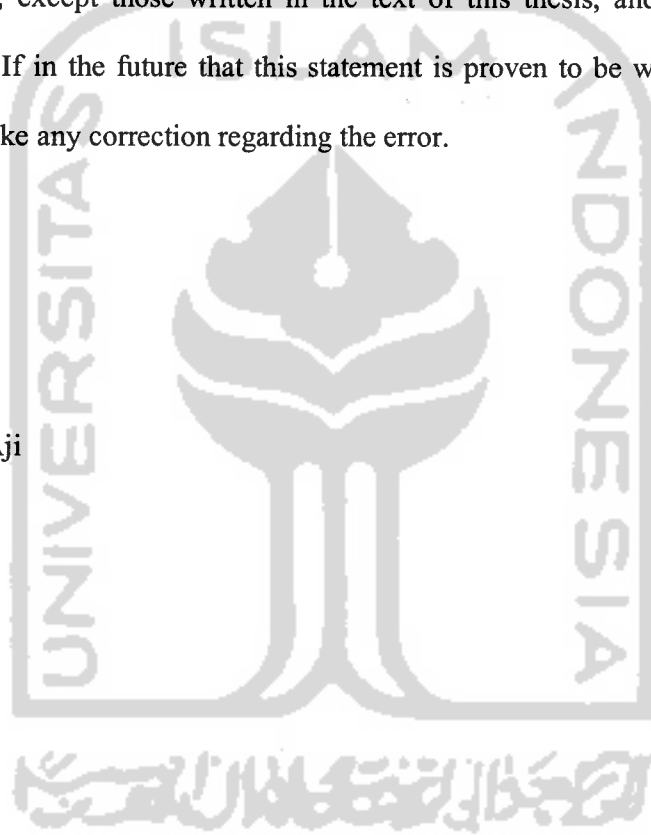
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YOGYAKARTA
2007**

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Herewith the writer declare that in this thesis, there is no opus that have been proposed for obtaining the bachelor degree in any other university, and as the writer knows, there is also no opus that have been written or published by other persons, except those written in the text of this thesis, and stated in the bibliography. If in the future that this statement is proven to be wrong, then the writer will make any correction regarding the error.

Yogyakarta,

Sendy Bayu Aji



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By

ISLAM
SENDY BAYU AJI

Student Number: 03312309

Approved by

Content Advisor



Suwaldiman, SE., M.Accy., Ak.

June 20, 2007

Language Advisor



Nihlah Ilhami, S.pd

June 20, 2007

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A BACHELOR DEGREE THESIS

By

SENDY BAYU AJI


Student Number: 03312309

**Defended before the board of Examiners
On July 25, 2007
And Declared Acceptable**

Board of Examiners

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Suwaldiman, SE., M.Accy., Ak.


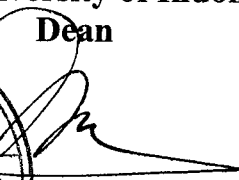
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Examiner 2:

Primanita Setyono, SE., MBA., Ak.

.....


**Yogyakarta, July 25, 2007
International Program
Faculty of Economics
Islamic University of Indonesia
Dean**


Asmar Ishak, Drs., M.Bus., Ph.D


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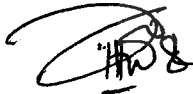
Content Advisor



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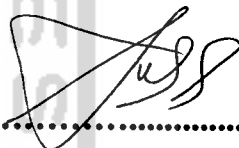
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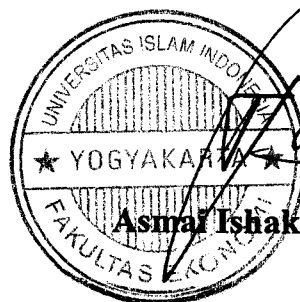
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Asma' Ishak, Drs., M.Bus., Ph.D

Special Respectful Notice

» يَا أَيُّهَا الَّذِينَ آمَنُوا إِذَا قِيلَ لَكُمْ تَفَسَّحُوا فِي الْمَجَالِسِ فَافْسَحُوا
يَفْسَحِ اللَّهُ لَكُمْ وَإِذَا قِيلَ انشُزُوا فَانشُزُوا يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا
مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ وَاللَّهُ بِمَا تَعْمَلُونَ خَبِيرٌ

[58:11] O you who believe! When you are told to make room in the assemblies, spread out and make room. Allah will give you ample room from His Mercy. And when you are told to rise up for prayer, Jihad (holy fighting in Allah's Cause, or for any other good cause), rise up. Allah will exalt in degree those of you who believe, and those who have been granted knowledge. And Allah is Well Acquainted with what you do.

Hai orang-orang beriman, bila diminta kepadamu, "Berilah tempat di majelis," berilah keluasaan padanya Allah pasti akan memberimu kekeluasaan. Dan bila kamu diminta, "Bangkitlah," maka bangkitlah dari tempat dudukmu. Allah pasti akan mengangkat orang-orang yang beriman dan berpengetahuan di antaramu beberapa tingkat lebih tinggi.

» فَبِأَيِّ آلَاءِ رَبِّكُمَا تُكَذِّبَانِ

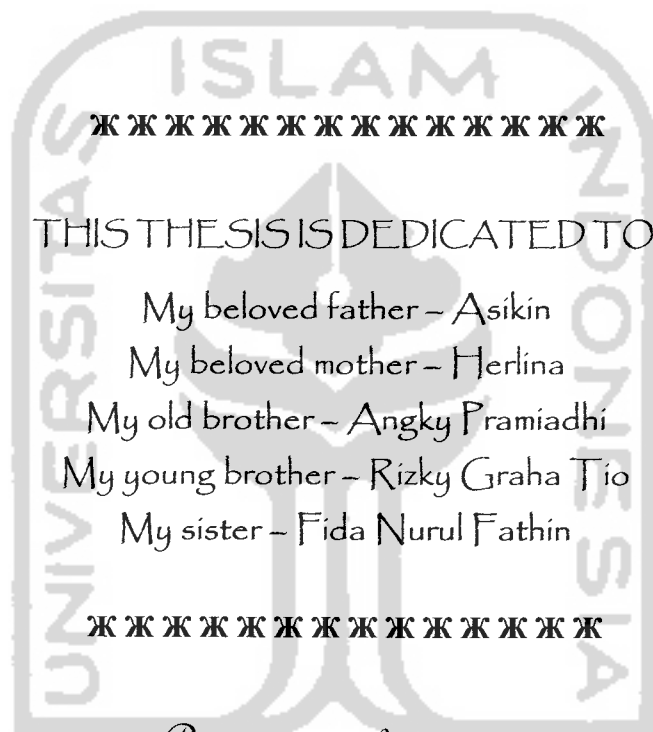
[51: 20] Then what of the favouring of you? Will you both (jinn and man) deny?

Karunia Tuhanmu yang manakah yang kamu berdua (Jin dan Manusia) dustakan?

» Putera wayah wulangan marang kautaman, predinen susileng tata, supaya gawe pepedhanging kulawarga.

Teach virtue to your children and grow children educate them on decency, so as to make them the light of the family

Anak cucu didiklah kearah keutamaan, didiklah tatasusila, agar dapat menjadi sinar cahya keluarga.



THIS THESIS IS DEDICATED TO:
My beloved father – Asikin
My beloved mother – Herlina
My old brother – Angky Pramadi
My young brother – Rizky Graha Tio
My sister – Fida Nurul Fathin

» Pasah marang Pangeran iku ora ategesora gelem nyambutgawe, nanging percaya yen Pangeran iku Maha Kuasa. Dene kasil arane apa kang kita tuju kuwi saka karsaning Pangeran.

Menyerahkan diri kepada tuhan bukan berarti tidak mau bekerja, melainkan percaya bahwa tuhan mahakuasa. Sedangkan berhasil tidaknya apa yang kita lakukan adalah kehendak Tuhan.

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My Brothers and my sister: Pram “Pretending Cunning Most” (Angky Pramiadhi)> Following your heart and logic to decide everything. Toi “Naughty Nice” (Rizky Graha Tio)> I like your style guy, rude but sure, show what they thinks about you, its all are not true. Fida “Pampered Cheerful” (Fida Nurul Fathin)> Show, that the last not means the least, I believe you are have potential mind and you will got what you want in the future ok baby, I promise, I will support you and always besides and behind you.

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Finally, this is for a special one in my heart, sorry to put you on the last pages, but that is not mean you are the least. You are who will be my wife thanks for all love, cares, support patient and everything you have been gave to me. I hope I'll find the true lover who guides me to sacrifice my body and soul to Allah.

May Allah bless all of us. Amien

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ABSTRACT

Sendy Bayu Aji (2007). The Analysis of The Relationship Between EVA (Economic Value Added) And MVA (Market Value Added) at Manufacture Industry for The Years 2003-2005. Yogyakarta. International Program, Department of Accounting. Islamic University of Indonesia.

The discussion about measurement of companies' performance has been done whether by internal and external party of companies. External party especially investor probably seek the value of companies performance first before they invest their capital. In other hand, the companies' performance measurement will influence the credibility of companies' value.

This research evaluates the performance of companies and correlates the value of companies with the investor responses that in this research they are represented as Economic Value Added (EVA) and Market Value Added (MVA). The period used in this research is from year 2003-2005. Subject of this research is the companies listed on Jakarta Stock Exchange which are involved in manufacture industries. By using purposive sampling method, there are 30 companies based on some criteria has been chosen as the sample. The data used in this research are taken from Indonesia Capital Market Directory (ICMD).

By using Rank Spearman Correlations as technical analysis, the result shows that there is strong correlation between EVA and MVA. Therefore there is also a strong correlation between the values of companies with the respond investor supported by the fluctuation graphic of both variable.

Key Words: Economic Value Added (EVA), Market Value Added (MVA)

ABSTRAKSI

Sendy Bayu Aji (2007). The Analysis of The Relationship Between EVA (Economic Value Added) And MVA (Market Value Added) at Manufacture Industry for The Years 2003-2005. Yogyakarta. Program Internasional, Jurusan Akuntansi. Universitas Islam Indonesia.

Diskusi mengenai pengukuran kinerja perusahaan senantiasa dilakukan oleh berbagai kalangan baik pihak dalam ataupun pihak luar sebuah perusahaan. Diprediksikan, pihak luar seperti investor melihat nilai kinerja perusahaan terlebih dahulu sebelum mereka menginvestasikan modal. Sementara itu pengukuran kinerja perusahaan akan mempengaruhi kredibilitas suatu perusahaan.

Penelitian ini mengevaluasi kinerja suatu perusahaan dan menghubungkan nilai suatu perusahaan dengan respon investor yang dalam penelitian ini dicerminkan sebagai Nilai Tambah Ekonomi (EVA) dan Nilai Tambah Pasar (MVA). Periode yang digunakan dalam penelitian ini menggunakan periode tahun 2003 sampai tahun 2005. Subyek dalam penelitian ini adalah perusahaan manufaktur yang tertera di daftar Bursa Efek Jakarta. Dengan menggunakan metode *purposive sampling*, tiga puluh perusahaan dipilih menjadi sample berdasarkan beberapa kriteria. Data yang digunakan pada penelitian ini diperoleh dari *Indonesia Capital Market Directory (ICMD)*.

Dengan menggunakan korelasi Spearman sebagai alat analisis, hasil dari penelitian ini menunjukkan adanya hubungan yang kuat antara Nilai Tambah Ekonomi (EVA) dan Nilai Tambah Pasar (MVA). Oleh sebab itu, hasil dari penelitian ini menyimpulkan terdapat hubungan yang kuat juga antara nilai perusahaan dan respon dari investor diperkuat oleh grafik fluktuasi kedua variabel.

Kata Kunci : Nilai Tambah Ekonomi (EVA), Nilai Tambah Pasar (MVA)

CHAPTER I

INTRODUCTION

1.1 Study Background

Investors measure a firm performance as a whole to decide whether they want to invest in the firm, to continue with the firm, or to exit from it. In order to achieve goal congruence, management of company is often linked with the performance of the responsibility centers and also with firm-performance. Therefore, the selection of the right measurement is a critical to the success of an investor. To measure the performance of a firm, the investors need a method for correctly measuring value creation.

All the current metrics are trade off between the precision in measuring the value and its cost of measurement. In other words, each method takes into consideration of the degree of complexities in quantifying the underlying measurement. The complexities of each method are the process of the subjectivity level and cost in measuring the performance of the firm.

There is a continuous endeavor to develop a measurement that captures the overall performance. Probably, the most popular periodic value-based performance measurement is Stern Stewart's Economic Value Added (EVA). EVA is an economic measurement that includes a charge for the opportunity cost of capital. It offers a means of measuring and communicating performance. It is used in setting managerial performance targets, paying bonus, and valuing capital projects or companies.

In western countries, Economic Value Added (EVA) has been proven as prominent measurement of companies' business performance. EVA is better than other traditional performance measurement such as ROA (Return On Asset) and ROE (Return On Equity) because it has two advantages. First, EVA considers cost of equity in calculating the net income. Second, EVA uses some adjustments in calculating the certain expenses including research and development expenses, selling expenses, bad debt expenses, etc. According to SWA magazine, EVA has been used by some companies in the United States such as General Electric, Wal-Mart, Microsoft, Cisco System, and Coca-Cola. In Indonesia, EVA has been implemented by PT Sari Husada, PT Astra Indonesia, and PT Bank BNI.

However, researchers of the relationship of business performance and stock returns in Indonesia conclude that the traditional measurement is better than EVA. In fact, EVA has not been broadly used in the decision process; even investors and securities analysts did not recommend EVA as their financial decision making of investment in stock exchange. Managers of companies with good or positive EVA have revealed that they explicitly did not use EVA to evaluate business performance. Accordingly, EVA has only been used for internal decision-making including in evaluating performance of division managers to give bonuses, and soon.

On the other hand, MVA has recognized effect of manager's authority for shareholder since the establishment of the company, while EVA measures the manager efficiency on that year (Gapensky, 1996). MVA is the difference between the market value of the firm (including equity and debt) and the total capital invested in the firm. The researchers indicate if the EVA is positive, company value will increase. The increasing can be recognized by price of share.

The evidence of empirical studies, majority, regarding EVA suggests that there is a positive relationship between EVA and shareholder value creation, measured by Market Value Added (MVA). Theoretically, EVA has a relation with the market value of a company. If the value of EVA is projected and discounted to the present value, the result is Market Value Added (MVA), because MVA is the cumulative performance that shows the measurement by stock market in a certain time. What encourages the researcher to conduct the research, it is because there are still a few companies using EVA as the performance measurement in Indonesia.

The researcher is interested to study about **“THE RELATIONSHIP BETWEEN EVA (Economic Value Added) and MVA (Market Value Added) AT MANUFACTURE INDUSTRY”**. The manufacture companies have been chosen because their populations in Jakarta Stock Exchange are bigger than service or merchandise companies. The aim of this research is hopefully to support the result of previous research and give a description that EVA is a good measurement tool for company performance.

1.2 Identification of the Problem

Based on the background, the researcher identifies two differences opinion related to EVA and MVA. The first opinion says that EVA and MVA have relationship, but the other opinion says that both of them do not have relation. The problem rise when EVA and MVA have relationship; how close EVA has a relation with price of share in a company, especially on manufacture companies. In this research, price of share is reflected by MVA (Market Value Added). It is because most of the investors assume a good company is a company with higher price of share and has good values.

1.3 Formulation of the Problem

The formulations of the problem in the research are:

- a. Does Economics Value Added have a relationship with Market Value Added at Manufacture Companies, using year 2003 to 2005 at manufacture company report?
- b. How do investors respond (represented by MVA) to the high or low of EVA amount of companies on research year?

1.4 Limitation of the Problem

Due to the limitation on part of the research, the researcher only focuses on the relationship between EVA and MVA. In this case researcher does this research on Indonesian company with some scope limitation, which are:

1. This research will obtain the data from manufacturing companies listed in Jakarta Stock Exchange (JSX).
2. The researcher conducts the research using sample method only for thirty companies.
3. The time of research data only use three period of year 2003 to 2005.

1.5 Objective of the Research

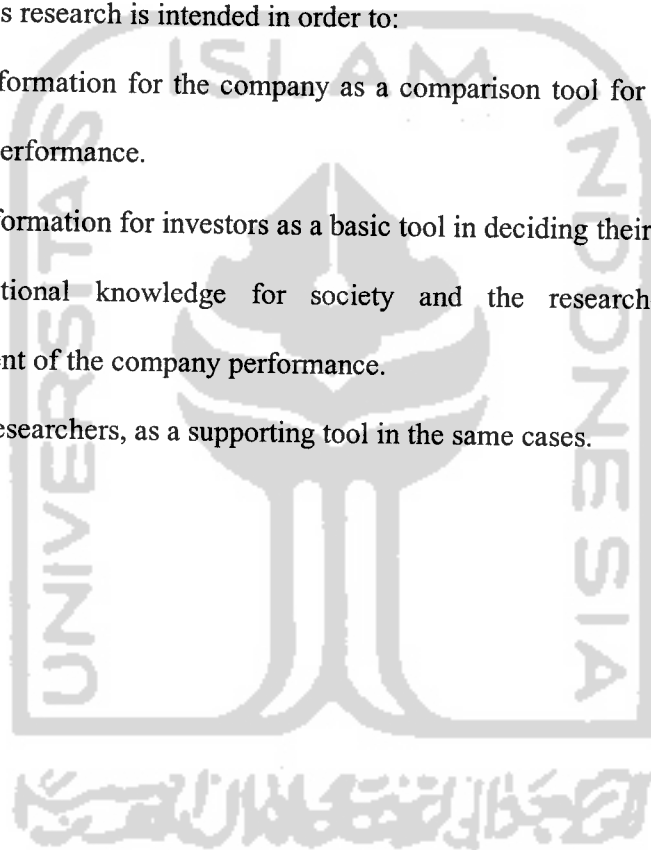
Based on the study background and problem formulation, the objectives of this research are:

- a. Knowing companies' performance by calculating the EVA and MVA of companies.
- b. Knowing whether EVA has a relation with MVA values in companies during the research year.

1.6 Contribution of the Research

This research is expected to have advantages for both companies and investors. Research about the relation of EVA and MVA actually had been done by some researchers so that the researcher hopes that this research will add information of EVA, which this method is reliable to be implemented by a company. This research is intended in order to:

- a. Provide information for the company as a comparison tool for measuring the company performance.
- b. Provide information for investors as a basic tool in deciding their decisions.
- c. Give additional knowledge for society and the researcher about the measurement of the company performance.
- d. For other researchers, as a supporting tool in the same cases.



CHAPTER II

THEORITICAL FRAMEWORK

2.1 EVA as Reliable Measurement of a Company's Performance

According to the book of EVA and Value-Based Management, S. David Young and Stephen F. O'Byrne explained about Market Value Added (MVA) and excess return. They wrote both of managerial performances have some weaknesses. Excess return has important weaknesses in terms of motivating and evaluating managers, although maximizing excess return should be the ultimate goal of the value-based firm. It is unlikely to be effective in motivating managers below the top management ranks, because it can be calculated only for publicly. Operating divisions do not have share prices, and thus it is possible to observe actual shareholder wealth traded entities. And the weakness of MVA is it fails to take into account previous cash returns to share holders.

Excess return and MVA are plagued by still another problem. Both are wealth or "stock" measures. A stock measurement is a term used by economists to denote the wealth that has been accumulated as of a certain date. It's a snapshot measurement that by itself says nothing about performance or the creation of value over a period of time. The problem is that managerial performance must be evaluated over periods of, say three years. We need flow measurement, not stock measurement.

What we need, therefore, are measures of performance that:

1. Can be calculated at divisional levels, thus providing line of sight for divisional managers.
2. Are flows, not stocks, and thus are amenable to performance evaluation over periods of time.
3. Promote the creation of shareholders wealth.

To solve this problem Stern Steward Management Service as one of the companies cooperation in the United States introduced the EVA. Therefore, unlike market-based measurement such as excess return and MVA, EVA can be calculated at divisional levels. If NOPAT, which measures the after-tax profit the company has generated from its ongoing operations. Invested capital, and the WACC are known, EVA theoretically can be calculated for any entity, including divisions, departments, product lines, and geographic business segments and so on. EVA can restore the line of sight at divisional levels that is not able when using excess return or MVA.

EVA also satisfies second criterion, namely, that we want a flow measure for performance measurement, not a stock measure. EVA is a flow, because it is a measure of profit. All profit measures, by definition, are flow. EVA is a means of turning the stock measure of excess return into a flow. The principal difference between EVA and more conventional profit measures is that EVA is an “economic” not “accounting” profit. It is based on the idea that for a business to earn what economists call “rent” (i.e., abnormal return on investment), revenues must be sufficient to cover not only all operating costs but also all capital costs

(including the cost equity finance). Without the prospect of economic profits, there can be no wealth creation for investors. Stern Steward calculated EVA as the after tax operating income subtracted by total cost of capital, where, the total cost is measured by capital cost multiplied by total of invested capital.

According to Uyemura, et.al, one of the classic challenges of corporate governance has been to define and implement an ambiguous measure of performance correlated well with shareholder wealth creation. Economic Value Added becomes a primary performance measurement, which can align the interest of management and shareholder. If a company has a positive EVA, the company managers add wealth to the shareholders because the after-tax rate of return on invested capital exceeds the weighted-average cost of capital. On the other hand, if the company has a negative EVA, it means the company's managers reduce market value by investing in capital projects that cannot cope with the returns of debt and equity (Grant 1996).

EVA is an operational measurement that different from conventional earnings measures in two ways (Uyemura et.al., 1996)

1. EVA explicitly charges for the use of capital and for this reason, is sometimes referred to as a "residual income" measure; and
2. EVA adjusts reported earnings to minimize accounting distortion and to better match the timing of revenue and expense recognition.

Investors or other parties look for an appropriate measurement to assess management's performance with regard to shareholder's wealth creation. Earnings per share growth return on equity, market capitalization, and others are popular measurements. Uyemura et.al, noted that shareholders wealth creation could be measured by using MVA. They defined MVA as a difference between the current market value of all capital elements and the historic dollar amount of capital invested in the company.

Another proponent of EVA argues that EVA is a superior measure as compared to other performance measures on three counts:

- It is nearer to the real cash flows of the business entity;
- It is easy to calculate and understand; and
- It has a higher correlation with the market value of the firm.

The third merit can be considered as a reflection of the first and the second. If EVA truly represents the real cash flows of a business entity and it is easy to calculate and understand, then it automatically follows that it should be closely related to the market valuation and it should minimize the dysfunction of the management when used as an incentive measure. In other words, close relation to market valuation and convergence of managerial interests with shareholders interests is a vindication of EVA as a superior metric.

The relation between EVA and the companies value show that EVA can be used as a tool for knowing the companies value if the measurement of it not only on current time but also in the future. This is caused by the EVA on certain year showing the amount of value creation in that year, but the value of companies has

been the current value and also the value creation during that companies build. Based on the Edwards Bell-Ohlson, Lee (1996), told about the value of companies represented by the addition between total capital that is invested with the current value and the total EVA in the future:

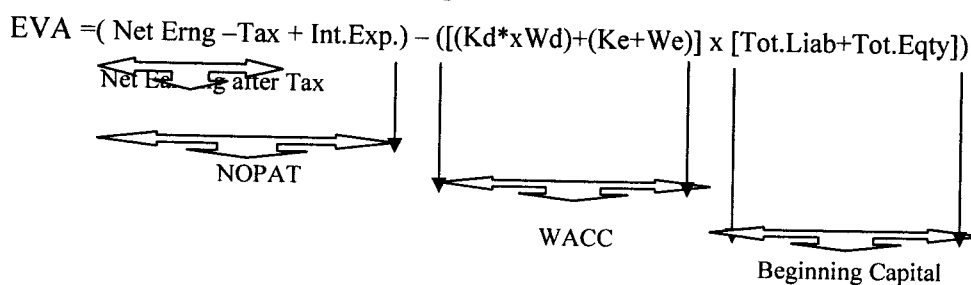
Companies value = Total of Invested Capital + Current Value of future EVA

The equalization above, clearly, shows that the higher EVA will increase the companies' value where the value creation will be reflected by the increasing of stock price. We can estimate the positive or negative value of EVA of each company by comparing the ratio of market value of that company with the total of invested capital. Company's value is reflected by the market value. Therefore, companies having the positive value of EVA have the ratio more than one, and vice versa.

2.2 Component of Economic Value Added

To calculate EVA, each company should have several items on its financial report such as Profit after tax, interest expense, total liabilities etc, and these items will be converted to component of EVA. There are some instrument components of EVA.

Figure 1
Components of EVA



$$\text{Economic Value Added (EVA)} = \text{NOPAT} - (\text{WACC} \times \text{Beginning Capital})$$

- Net Erng = Net earning
- Tax = Tax rate
- WACC = Weight Average Cost of Capital
- Tot.Liab = Total liabilities
- Tot. Eqty = Total equity
- EVA = Economic Value Added

2.2.1 Net Operating After Tax (NOPAT)

Net Operating Profit After Tax (NOPAT) is a measure of after-tax operating profit. It is similar with Earnings Before Interest and Tax $\times (1 - \text{Corporate tax rate})$. Alternatively, NOPAT can also be calculated by adding income available to common shareholders and preferred dividends the minority interest provision and the interest expense after tax.

Economic Value Added can be positive or negative. EVA is positive if NOPAT exceeds the cost of financing. The authors of EVA state that, in this case, the company has created shareholder value. On the other hand, when EVA is negative, the company has decreased value to its shareholders.

$$\text{NOPAT} = \text{Net Earning After Tax} + \text{Interest Expense}$$

2.2.2 Beginning Capital Value

Beginning capital is one part of EVA components that contains total liabilities and total equity which are from the end of previous period of financial report of company.

$$\text{Beginning Capital} = \text{Total liabilities} + \text{Total Equity}$$

2.2.3 Annual Weighted Average Cost of Capital (WACC)

The cost of capital for any investment, whether in a project, a business division, or an entire company, is the rate of return that a capital provider would expect to receive if the capital were invested elsewhere, in a project, asset, or company of comparable risk. In other words, the cost of capital is an opportunity cost. The cost of capital for, say, project A is the benefits we forgot by not investing in other opportunities of similar risk because we invest in A. Why invest in A? Because we expect that it is the next best alternative. If this were not true, we would not commit our capital to project A.

Without going into the technical details of how to calculate the cost of capital, based on S. David Young and Stephen F. O'Byrne, there are two important lessons about it:

- The cost of capital is based on expected return, not historical returns.
- The cost of capital is an opportunity cost that reflects the returns that investors expected from other investments of similar risk.

The risk element is crucial to understanding the cost of capital and how it is calculated. All investors are risk-averse, preferring less risk more. Of course, this does not mean that investors will not inherent risk. It only means that they do not like risk, and they must be paid to inherent it. How are they paid to inherent risk? In the form of higher returns; it is a simple as that. What is not so simple, and requires some technical knowledge of how capital markets work, is just how much more investors must expect to get before they feel adequately compensated of risk.

Because different forms of financing carry different risks for investors, they must also carry different costs for the issuing company. As we have already learned, investors require higher returns for buying shares in company than they do when they lend, the former riskier. Therefore, a company's cost of capital depends not only on the cost of debt and equity financing but also on how much of each has in its capital structure.

This relationship is incorporated in the company's weighted-average cost of capital, popularly known as WACC. WACC is calculated as follows:

$$WACC = ((Kd^* \times Wd) + (Ke \times We))$$

Ke = Cost of Equity
Kd = Cost of Debt

We = Capital Rate of Equity
Wd = Capital Rate of Liabilities

2.2.3.1 Kd = Cost of Debt

Cost of debt measured by interest expense divided by total debt or liabilities.

$$Kd = \frac{\text{Interest expense}}{\text{Total debt}}$$

Cost of debt taxes on this research is decided for 30%, because whole of company's return for this research is predicted more than Rp. 100.000.000 per year, and this rule is based on art 17 UU income taxes for corporation. The calculation of cost of debt after taxes is:

$$Kd^* = Kd (1-t)$$

Kd = Cost of equity before tax
T = tax rate

2.2.3.2 Ke = Cost of Equity

1. CAPM (capital asset pricing model) Approach
2. Dividend Yield Approach
3. Price Earning Approach

Cost of equity has been found by using price earning approach, meaning that we need a formula which contains of Earning Per Share (EPS) and market value of share, on this term represented as price.

The formula is

$$K_e = \frac{\text{EPS}}{\text{Price}}$$

EPS = Earning Per Share
Price = market value of share

2.2.3.3 Wd = Capital Rate of liabilities

The formula of capital rate of liabilities is total liabilities divided by total liabilities and total equity of a company.

$$\text{Capital Rate (Wd)} = \frac{\text{Total Liabilities}}{\text{Total Liabilities and Equity}}$$

2.2.3.4 We = Capital Rate of Equity

The formula of capital rate of equity is total equity divided by total liabilities and total equity of a company.

$$\text{Capital Rate (We)} = \frac{\text{Total equity}}{\text{Total Liabilities and Equity}}$$

2.2.4. Formula of EVA

After the whole components of EVA are recognized, we can implement them to the EVA formula which is:

$$\text{EVA} = [\text{NOPAT} - (\text{WACC} \times \text{Beginning Capital})]$$

NOPAT = Net Operating Profit After Tax
WACC = Weight Average Cost of Capital

2.3 Strength and Weaknesses of EVA

2.3.1 The Strength of EVA

In United States, the usage of EVA become more popular than before because it is related to managers' awareness that told about their duty to maximize value of company. EVA causes the attention of management appropriate with shareholders necessity. By using EVA, managers think and act like shareholders. They choose maximum investment return and minimum cost of capital in order to increase company's value. Based on Lehn and Makhija (1996), EVA is the most reliable measurement tool in companies. They analyze the relation between ROA, ROE with stock return. In fact, they state that EVA has the strongest relationship with stock return. Their research supports the effectiveness of EVA as the company's performance measurement.

The managers realize that ROA and ROE have weaknesses. Both of them neglected cost of capital, thus it is difficult to know the company performance in making value. For example, PT XYZ has two divisions, division A and division B. ROA of division A is 12% and ROE of division B is 10%. By using ROE

criteria, the performance of division A looks better than division B. But this term is not absolutely right. By using EVA approach, the risk of both divisions has to be analyzed first. It assumes that the risk of division A is higher than division B (14% vs. 8%). In fact by comparing between rate of return and rate of capital cost of each division, division B creates the value and division A decreases the company's value. In the other word, division A has positive EVA and division B has negative EVA. It shows that ROA is potentially having misleading decision.

EVA is useable to identify projects that give the excess return higher than cost of capital. The projects which give the present value from positive EVA represent that the projects create value that's better to be taken, vice versa. EVA in evaluating project will encourage the manager to evaluate the risk of project. Thus, managers should compare project's rate of return with the project's rate of invested capital. It will show degrees of project risk.

Briefly, the Strengths of EVA are:

- a. EVA is focused on value added measurement by considering capital expense as the investment consequence
- b. Easy to do, but the problem is the calculation of capital expense which needs more data.
- c. EVA can be used independently. It does not need other data like industry standard that the other measurement tool uses the ratio analysis.
- d. EVA focuses on value creation
- e. EVA causes the management attention appropriate with shareholders necessity.

- f. With EVA, managers think and act like a shareholders. They choose the investment which maximize the return and minimize the cost of capital in order to increase company's value.
- g. With EVA, managers should compare project's rate of return with the project's rate of invested capital. It will show the degree of project risk.

2.3.2 The Weaknesses of EVA

Besides having strengths, EVA also has weaknesses. First, EVA only measures in certain year. Actually, the value of company is an accumulation of EVA since the company has been built. It is possible to a company has bad value although in certain year has positive EVA because in the next year the EVA is probably bad or negative. For example, company A sells 60% of share in outside party, EVA of this company is positive. It is because most profit is caused by selling the share. But in the next year the profit will decrease and it will encourage negative EVA.

Contrary with the first condition, its possible to a company has good value although in certain year has bad EVA or negative EVA, because in the next year EVA probably will be good or positive. When the company invests their capital on new business, the aim of new business is not achieved yet and the company will be has long time to have the return. The example is company which run on transportation vehicle rent such as air plane, train, etc. Most of the cash flow in this company comes from the selling of vehicle in the last period of rent. But in the first period until the vehicle is being sold, the income only comes from rental

fee that the amount is not appropriate with capital cost. It causes negative EVA in the beginning period, and EVA will be positive in the end of rent period.

Briefly, the weaknesses of EVA are:

- a. EVA only measure in certain year but the value of company is the accumulation of EVA since company has been built.
- b. EVA only measures the result. This concept does not measure other activities like consumer loyalty and consumer potentiality.
- c. Based fully in belief that investors use fundamental approach in learning and deciding whether to sell or buy certain share. In fact, the other factors are sometimes more dominant.

2.4 Market Value Added

One of metrics is market value added (MVA). MVA is the difference between the market value of the firm (including equity and debt) and the total capital invested in the firm:

$$\text{MVA} = \text{Market Value} - \text{Invested Capital}$$

$$\text{MVA} = (\text{issued share}) \times (\text{price of share}) - (\text{total equity common share})$$

Market Value is the enterprise value of the firm, namely, the sum of the market value of all capital claims, held against a company by the capital markets as of particular date. More simply, it is the sum of the market value of debt and the market value of equity. Invested capital is the amount of capital invested in the company by its capital providers on the same date. How do we know if a company

is a value creator? Its market value, which is a function of capital market expectation of future free cash flows, discounted at the cost capital, exceeds invested capital. In other words, MVA is positive.

Investors contribute capital to firms to anticipate if managers are investing it productively. Market value reflects the market verdict on how successful managers have been in investing the capital entrusted to them, in transforming it into something bigger, and the higher MVA, the better. Negative MVA means that the value of the investment undertaken by management is less than the capital contributed to run the companies. This means that wealth has been destroyed.

MVA increases only when invested capital earns a rate of return greater than the cost of capital. When newly raised capital is invested in value-creating projects (i.e., those with a positive net present value), MVA is increased. When that capital is invested in value-destroying projects (i.e., those with a negative net present value), MVA is reduced.

2.5 Theoretical Review

Sri Isworo Adiningsih and Sumarni conduct the research about the relation between Economic Value Added and Market Value Added. They choose 10 companies as the sample, and the period used in their research is from 1998-2002 financial reports. They conclude every company that has measured its performance by using EVA and MVA shows different result, positive and negative. The company has positive EVA when it is successful to create company value. On the other hand, if the company fails in creating value because its rate of return capital is less than rate of cost capital, the company will has negative EVA. If the company has positive MVA it means that it has good possibility appreciation from investors to the company in the future, and vice versa. Their research concluded that there is a positive relationship between EVA and MVA.

Yevi Dwitayanti conducts the research about the influence of Economic Value Added on Market Value Added which has 30 companies as the sample and the period used on her research is from 1998-2001 financial report. The result concludes that EVA has influenced MVA, significantly.

Sugiyanto conducts the research about valuation of cooperation using Market Value Added and Economic Value Added. It can be concluded that there are only five of eighteen companies which have achieved the Economic Value Added continuously for three year since 2002-2004, and only six companies which have achieved positive Market Value Added continuously at the same periodic years.

2.6 Hypothesis Formulation

Positive or negative MVA for a company as the basic estimation of capital market and NPV of company project, it is already anticipated by the investor in the future. Based on the explanation, MVA is the result of the cumulative of company performance that is yielded by some investment. MVA shows how far a company has been successful in its invested capital and how it will be successful in investing their capital in the future.

Therefore, a company receives return more than capital cost, it shows positive EVA and positive NPV, and it will have premium stock market value. On the contrary, if a company receives return less than capital cost, it shows negative EVA and negative NPV. EVA and MVA have positive relation, the value of MVA will be better because the more and more value of EVA. According to the statement, Stern Stewart believes that EVA is the key to create company value and to make the maximum MVA. EVA has sensitive relation with each chance of MVA.

Sri Isworo and Sumarni also conclude in their research that EVA has a positive relationship with MVA because the increasing or decreasing of EVA has a relation with the increasing or decreasing of MVA. Based on explanation above, the researcher can assume the alternative hypothesis:

The hypothesis is: there is a relation between MVA and EVA

2.7 Populations and Sample

This research uses the population of manufacture companies listed as the continuously emittent on the Jakarta Stock Exchange during the period of 2002 to 2005 year period. The researcher chooses the period because on those years, the economic stability in Indonesia was growing up, after the reformation era and monetary crisis. Probably, EVA of a company would grow up too.

The way to choose the sample is using purposive sample method, which is based on some criteria, they are:

1. Go public company which runs on manufacture industry.
2. A company which is issued its financial report every year from 2003 to 2005 and which has 31 December as the end of its financial period.
3. Always listed on the Jakarta Stock Exchange in 2003 to 2005 and never miss that period.
4. There are interest expenses on the company's financial report

Data on this research is the secondary data achieved from companies' financial report annually and the ICMD 2006 that consists of the price of share, earning after tax, equity value and the issued share since year 2003 - 2005 that are found from the Jakarta Stock Exchange Corner at the Economic Faculty of Indonesian Islamic University.

2.7.1 Data Resource

- In this research, the researcher chooses the manufacture companies; this is based on the previous research done by Sugiyanto about the measurement of manufacture companies using EVA and MVA, and also the research done in SWAsembada magazines. The research in SWAsembada magazines calculates the best fifty of companies that create EVA, and more than half of them are those that run on manufacture companies.
- Interest expense which is used to calculate cost of debt is obtained from companies' annual financial report on 31 December 2003 up to 31 December 2005 year period.
- The other data such total liabilities, total equity book value, dividend, which are used to calculate cost of debt, and beginning capital, are obtained from annual financial report of each company on 31 December 2003 up to 31 December 2005 year period.
- Earning after tax, equity value, and amount of outstanding share are obtained from Indonesia Capital Market Directory (ICMD) in the year of 2006.

CHAPTER III

RESEARCH METHOD

3.1 Definition Variable

• EVA (as the independent variable) is the companies' performance tool defined as the excess of a company after tax operating profits, which are more than the required minimum rate of return that the investors can get by investing in securities of comparable risk. Developed by Stern Stewart & Company, EVA is the difference between the firm's after-tax return on capital and its cost of capital. Stewart (1991) defined EVA as residual return that subtracts the cost of invested capital from net operating profit after tax. EVA is equal to the economic book value of the capital at the beginning of the year and the difference between its return on capital and cost of capital.

• MVA (as the dependent variable) is the excess of market value of capital (both debt and equity), which is over the book value of capital. If the MVA is positive, the company has created wealth for its shareholders. According to Stern and Shiely (2001), to determine the market value, equity is taken at the market price on the date the calculation is made, and debt at book value. The total investment in the company since day one is calculated as interest-bearing debt and equity, including retained earnings. Then, present market value is compared with total investment. If the former amount is greater than the former, the company has created wealth.

3.2 Population and Sample

This research uses the population of manufacture companies listed as the continuously emittent on the Jakarta Stock Exchange during the period of 2002 to 2005 year period. The researcher chooses the period because on that year, the economic stability in Indonesia was growing up, after the reformation era and monetary crisis. Probably, EVA of a company would grow up too.

The way to choose sample is by using purposive sample method, which is based on the some criteria, they are:

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4. There are interest expenses on the company's financial report

Data on this research is the secondary data achieved from companies' financial report annually and the ICMD 2006 that consist of price of share, earning after tax, equity value and the issued share since year 2003 - 2005 found in the Jakarta Stock Exchange Corner at the Economic Faculty of Indonesian Islamic University.

Table 3.1
The thirty companies which are chosen randomly are:

No	Code	Company	Specification
1	ASII	PT Astra International Tbk.	Automotive and Components
2	AUTO	PT Astra Otoparts Tbk.	Automotive and Components
3	GJTL	PT Gajah Tunggal Tbk.	Automotive and Components
4	AQUA	PT Aqua Golden Misisipi Tbk.	Food and Beverages
5	SMAR	PT Sinar Mas Agro Tbk.	Food and Beverages
6	INDF	PT Indofood Sukses Makmur Tbk.	Food and Beverages
7	MYOR	PT Mayora Tbk.	Food and Beverages
8	MLBI	PT Multi Bintang Indonesia Tbk.	Food and Beverages
9	STTP	PT Siantar TOP Tbk.	Food and Beverages
10	DAVO	PT Davo Mas Abadi Tbk.	Food and Beverages
11	GGRM	PT Gudang Garam Tbk.	Tobacco Manufacturers
12	HMSP	PT Hanjaya Mandala Sampoerna	Tobacco Manufacturers
13	RMBA	PT Bentoel International Tbk.	Tobacco Manufacturers
14	KLBF	PT Kalbe Farma Tbk.	Pharmaceuticals
15	TSPC	PT Tempo Scan Pacific Tbk.	Pharmaceuticals
16	KAEF	PT Kimia Farma Tbk.	Pharmaceuticals
17	INCI	PT Intan Wijaya Tbk.	Chemicals
18	DPNS	PT Duta Pertiwi Nusantara Tbk.	Chemicals
19	INTP	PT Indocement Tunggol Prakarsa	Cement
20	SMCB	PT Semen Cibinong Tbk.	Cement
21	SMGR	PT Semen Gresik (Persero) Tbk.	Cement
22	BRPT	PT Barito Pacific Timber Tbk.	Wood Industries
23	AMFG	PT Asahimas Flat Glass Tbk.	Ceramics, Glass, Porcelain
24	BRNA	PT Berlina Tbk.	Plastics and Packaging
25	INDR	PT Indorama Syntetics Tbk.	Textiles, Garment
26	BATA	PT Sepatu Bata Tbk.	Footwear
27	KBLM	PT Kabelindo Murni Tbk.	Cable
28	LTLS	PT Lautan Luas Tbk.	Wholesale
29	TURI	PT Tunas Ridean Tbk.	Wholesale
30	HEXA	PT Hexindo Tbk.	Wholesale

3.3. Data Resource

- On this research, the researcher chooses the manufacture companies. This is based on the previous research done by Sugiyanto about measurement of manufacture companies using EVA and MVA, and also the research done in SWAsembada magazines. The research in SWAsembada magazines calculates the best fifty of companies that create EVA and more than half of them are those that run on manufacture companies.
- Interest expense which is used to calculate cost of debt is obtained from companies' annual financial report on 31 December 2003 up to 31 December 2005 year period.
- The other data such total liabilities, total equity book value, dividend, which are used to calculate cost of debt, and beginning capital, are obtained from annual financial report of each company on 31 December 2003 up to 31 December 2005 year period.
- Earning after tax, equity value, and amount of outstanding share are obtained from Indonesia Capital Market Directory (ICMD) on year 2006.

3.4. Analysis Method

There are some steps to analyze problem formulation, every step has sub step, such as to calculate EVA we need some calculation result data like NOPAT (Net Operating After Tax), WACC (weight average capital cost) and each component has sub component calculation, which will be described in each sub chapter.

3.4.1 Net Operating After Tax (NOPAT)

Net Operating Profit After Tax (NOPAT) is a measure of after-tax operating profit and is similar to Earnings Before Interest and Tax $\times (1 - \text{Corporate tax rate})$. Alternatively, NOPAT can also be calculated by adding to income available to common shareholders and preferred dividends the minority interest provision and the interest expense after tax. EVA is positive if NOPAT exceeds the cost of financing. The authors of EVA state that, in this case, the company has created shareholder value. On the other hand, when EVA is negative, the company has destroyed value to its shareholders.

$$\text{NOPAT} = \text{Net Earning After Tax} + \text{Interest Expense}$$

3.4.2. Beginning Capital Value

Beginning capital is one part of EVA components, containing of total liabilities and total equity which are from the end of previous period of financial report of company. For example, total liabilities and equity on the beginning of year 2003 is based on the end value of them in year 2002.

$$\text{Beginning Capital} = \text{Total liabilities} + \text{Total Equity}$$

3.4.3. Annual Weighted Average Cost of Capital (WACC)

A company's cost of capital does not only on the cost of debt and equity financing but also on how much of each it has in its capital structure. This relationship incorporated in the company's weighted-average cost of capital, is popularly known as WACC. WACC is calculated as follows:

$$WACC = ((Kd^* \times Wd) + (Ke \times We))$$

3.4.3.1 Kd = cost of debt

Cost of debt is measured by interest expense divided by total debt or liabilities (excluded minority interest to subsidiaries).

$$Kd = \frac{\text{Interest expense}}{\text{Total debt}}$$

Cost of debt taxes on this research is decided 30% because the whole company return for this research is predicted more than Rp. 100.000.000 per year, and this role is based on art 17 UU income taxes for corporate. The calculation of cost of debt after taxes is:

$$Kd^* = Kd (1-t)$$

Kd = Cost of equity before tax

T = tax rate

The degree of taxes obtained from the progressive taxes degree means that in every increasing of earning a company has been burdened in certain taxes degree.

The rules of art 17 UU income taxes for corporate are:

1. If the company has income 0 up to Rp. 50.000.000, it will be burdened 10 % taxes expense per year from income.
2. If the company has income Rp. 50.000.000 up to Rp.100.000.000, it will be burdened 15% taxes expense per year from income.
3. If the company has income up to Rp. 100.000.000, it will be burdened 30 % taxes expense per year from income.

Rules about income taxes lastly had been changed by art 17 about income taxes rules on year 2000. The whole companies that become the samples on this research are assumed to apply those rules. For this research, the income for each company in a year is more than Rp 100.000.000. So, to make it simple, the researcher is decided to imply 30% of taxes for each company.

3.4.3.2 Ke = Cost Of Equity

1. CAPM (capital asset pricing model) Approach
2. Dividend yield Approach
3. Price Earning Approach

There are some approaches of cost of equity calculation, such as, CAPM (Capital Asset Pricing), Dividend Yield method, and the Price of Earning Approach. CAPM looks the cost of equity as the addition of interest degree without risk and the subtraction between expected return degree from market

portfolio and interest degree without risk. The CAPM method is rarely used by researcher because of the difficulty to determine value of Beta. The researcher overrules CAPM method and tries dividend yield method. After the researcher calculates some cost of equity of companies, the researcher found an obstacle. There are many companies of the thirty companies that do not have value of payout ratio and dividend yield .So, the researcher take third alternative to find cost of equity, the researcher uses price of earning approach for the reliability of the research

Cost of equity has been founded by price earning approach, meaning that we need a formula that contains Earning Per Share (EPS) and market value of share on this term represented as (Price). The formula is:

$$K_e = \frac{\text{EPS}}{\text{Price}}$$

EPS = Earning Per Share

Price = market value of share/stock price

3.4.3.3 W_d = Capital Rate of liabilities

The formula of capital rate of liabilities is total liabilities divided by total liabilities and total equity a company itself.

$$\text{Capital Rate (} W_d \text{)} = \frac{\text{Total Liabilities}}{\text{Total Liabilities and Equity}}$$

3.4.3.4 W_e = Capital Rate of Equity

The formula of capital rate of liabilities is total equity divided by total liabilities and total equity a company itself.

$$\text{Capital Rate (} W_e \text{)} = \frac{\text{Total equity}}{\text{Total Liabilities and Equity}}$$

3.4.4. Formula of EVA

After whole of component of EVA are recognized, we can implement them to EVA formula which is:

$$\text{EVA} = [\text{NOPAT} - (\text{WACC} \times \text{Beginning Capital})]$$

3.4.5. Market Value Added (MVA) Calculation

Market Value Added is the sum of the market value of debt and the market value of equity. Invested capital is the amount of capital invested in the company by its capital providers at same date

$$\text{MVA} = \text{Market Value} - \text{Invested Capital}$$

$$\text{MVA} = (\text{Issued Share}) \times (\text{Price of Share}) - (\text{Total Equity Common share})$$

3.4.6 Data Analysis

Having obtained value of EVA and MVA, to know the relationship between both dependent and independent variables, the researcher uses the Rank Spearman correlation method which has the formula:

$$r_s = 1 - \frac{6 \times \sum_{i=1}^N d_i^2}{N^3 - N}$$

d_i = the different between ranking of both variable

N = Amount of subject sample

The reasons why the Rank Spearman is used to obtain the relation of EVA and MVA are:

1. The shape of population distribution, where the subject is taken randomly.
2. Rank Spearman test only assumes or requires that the variable must be continuously.

To determine the strong relation between variables, we can interpret based on the table below.

Table.3.2

Interpretation of rank spearman result

Coefficient interval	Grade
0.00 – 0.199	Lowest
0.20 – 0.399	Low
0.40 – 0.599	Middle
0.60 – 0.799	Strong
0.80 – 1.00	Strongest

Testing of r_s coefficient correlation is conducted in order to know the existing relation between EVA and MVA. The steps to conduct the Rank Spearman analysis are, firstly, the researcher will order the rank of both variables, from the total data of each year from year 2003 until 2005, and it is found that there are ninety data. After ranking the data, the rank subtracting between the rank of EVA and MVA will be a second step in the Rank Spearman analysis. Then, the amount of the subtraction should be multiplied or squared. Finally, the total of multiplication will be used or implied as the dI^2 coefficient in the formulas of the Rank Spearman. To avoid the bias result, the data pool has been used in this research by means of SPSS 15 as the analysis tool, and the data from year to year is united.

3.4.6.1 Making Hypothesis formulation

Based on the variables above, the hypotheses are:

The null hypothesis (H_0) : There is no relationship between MVA and EVA

The alternative hypothesis (H_a) : There is a relationship between MVA and EVA

3.4.6.2 Hypothesis testing

Hypothesis testing is done by using t-testing on the formulation of simple regression and then explaining the model statistically. This t-testing is used to test the appropriate model arranged and to know whether the independent variable has a relationship to independent variable if the amount of data is uncertainty. Some steps to conduct the hypothesis testing are:

1. Do the two tailed testing, determine significant level (α) 5 %, and recognize the value of z-table that is a direction in the acceptance area H_0 or H_a . The significant level or $\alpha = 5\%$ and the amount of the sample are ninety, but if the sample research is uncertainty or more then ninety so it can determine that z-table are $\pm 1,96$.

2. The ways to conclude

- Compare z-statistic with z-table

Formula of z-statistic determined by $Z = rs\sqrt{N-1}$

- If Z-statistic < Z-table, So H_0 Accepted
- If Z-statistic > Z-table, So H_0 Rejected
- Based on Probability
 - Probability > 0,05, so H_0 is accepted
 - Probability < 0,05, so H_0 is rejected

3. Decision Making

1. If H_0 is rejected, the relationship between EVA and MVA is statistically significant.
3. If H_0 is accepted, the relationship between EVA and MVA is statistically insignificant.

3.5. Investor's Responses

The second question in hypothesis formulation is how investor's responses on EVA amount of companies during year 2003 until 2005. According SWAmagazine in 2003, state that the higher of MVA value will increasing higher appreciation and respond from investors. Therefore, the researcher represents the investor's responses as the Market Value Added, because the objective of MVA measurement tool is to maximize the wealth of shareholders in cumulative. Based on those reasons, the researcher assumes that if MVA of companies is higher than previous year so the most investors will probably obstinate their investment or even they will increase their investment on those companies.

To answer this question the researcher compares between the fluctuation of EVA and fluctuation of MVA in the research year. If the fluctuation of EVA is in line with the fluctuation of MVA, it means that EVA or value of company has significant contribution to build investor's responses. The graphic will show the fluctuation, the blue line represents EVA value and the pink line represents MVA value.

CHAPTER IV

DATA ANALYSIS

This research uses the data of 30 manufacture companies chosen as the research samples that has been listed on the Jakarta Stock Exchange for three periods since 2003 until 2005 fiscal year. Rank Spearman is used as the analytical tool to know the relation between EVA and MVA, supported by statistical tool test to examine the hypotheses.

4.1 EVA calculation

To calculate EVA, there are some components which are done first such as; NOPAT, Beginning Capital, K_d , K_d^* , K_e , W_d , W_e , and WACC. There are thirty companies as the samples of this research; the researcher only describes Astra International Company as the sample of EVA calculation for the reason of efficiency. These are the calculations of Astra International Company in year 2003.

4.1.1 NOPAT

Formula of NOPAT is net earning after tax added by interest expense. Based on ICMD 2006 and financial report of Astra International Company, value of net earning after tax in 2003 is Rp. 4.421.583 (in million) and the value of interest expense is Rp. 656.056 (in million). The data shows that the value of NOPAT is Rp. 5.077.639 (in million).

4.1.2 Beginning Capital

Beginning capital of year 2003 is based on the data in the end of previous financial report period. These data are the total liabilities of company, added by total equity of company. In this research, total liability of Astra International Company in the end of previous period is Rp. 17.264.295 (in million) and the total equity of this company is Rp. 6.498.561 (in million), therefore Beginning Capital of Astra International Company is Rp. 23.762.856 (in million).

4.1.3 Cost of Debt (Kd) & (Kd)*

Cost of debt is measured by interest expense divided by total liabilities. Interest expense of Astra International Company in 2003 is Rp. 656.056 (in million) and the total liability is Rp. 17.264.295 (in million) which are these value are at the end of 2002. So, value of cost of debt (Kd) is 3.80%.

The researcher implies the tax in the cost of debt, and for the whole of the company is burdened by 30% of tax, this is based on the rules of art 17 UU income taxes for corporate that the company which has income more than Rp. 100.000.000 it must be burdened by 30% of tax income. And, based on the financial report of all companies, they have income more than a hundred million rupiah.

So, the value of Kd* is $3.80\% (1-30\%) = 2.66\%$

4.1.4 Cost of Equity (Ke)

There are some approaches of cost of equity calculation, such as, CAPM (Capital Asset Pricing), Dividend Yield method, and the Price of Earning Approach. Because CAPM method is rarely used by researcher for the difficulty to determine the value of Beta, the researcher overrules CAPM method and tries dividend yield method. After the researcher calculates some cost of equity of companies, the researcher finds an obstacle. There are many companies of the thirty companies do not have value of payout ratio and dividend yield because they have no value of earning per share. So, the researcher takes third alternative to find cost of equity, the researcher uses price of earning approach for the reliability of the research.

The formula of price of earning approach is earning per Share divided by price of share. Earning per share of Astra International Company in 2003 is Rp. 1.096 and the price of share is Rp. 5.000, so cost of equity of Astra International Company is 21.92%

4.1.5 Capital Rate of Liabilities and Equity (Wd & We)

The formula of capital rate of liabilities is the total liabilities divided by total liabilities added by total equity. Astra International Company has total liabilities Rp. 17.264.295 (in million) in 2003 and the total equity is Rp. 6.498.561 (in million). Total liabilities and total equity are gotten from the end of 2002 financial report. So the value of capital rate of liabilities (Wd) is 72.65%. While, value of We is the ratio between total equity with sum of total liabilities and total equity, therefore the value of We is 27.35%.

4.1.6 Weight Average Cost of Capital (WACC)

Value of Weight Average Cost of Capital (WACC) is determined by the cost of equity after tax (K_d^*) times capital rate of liabilities (W_d), added by multiplication result between cost of equity (K_e) and capital rate of equity (W_e). Component of WACC is found by some formulation on the previous explanation, and when the WACC formula is applied, the result of WACC value of Astra International Company is 7.93%.

After the researcher found all of the EVA components, those components are implied to WACC formulas. EVA formula is value of NOPAT subtracted by the result of multiplication between WACC and beginning capital. From the calculation above the result of EVA component and the value of EVA itself is Rp. 5.077.639 (in million) – (7.93% x Rp. 23.762.856(in million)) = Rp. 3.193.245 (in million).

4.2 MVA calculation

Market Value Added is the amount of issued share times Price of share minus by Total Equity. Total equity value is the beginning of equity which is taken from the previous period. For example, to calculate MVA of year 2003 the total equity data used is the amount of the previous financial report in the end, because the beginning of total equity value is total equity value in the end of previous period. The data of issued share is taken from ICMD 2006, and the amount of share is the amount at the end of that year.

MVA of Astra International Company in 2003 is

MVA (in million) = (Issued Shared x Price of Share) – Total Equity

Rp. 13.743.216 = 4048355314 x Rp. 5000 – Rp. 6.498.561 (in million)

Astra International Company is one of the samples of MVA calculation, and the other MVA calculations of the twenty eight companies during three year are the same way as the Astra International Company MVA calculation.



4.3 Analysis of Correlation

Correlation analysis between both variables is conducted by using the Rank Spearman analysis tool because this analysis tool processes the relation between both variables which have the sequence. It means that in every research year there is the ordering rank of EVA and MVA. The analysis correlation uses the Rank Spearman analysis in SPSS 15 software. The steps of analysis are:

4.3.1 Rank the EVA of ninety data

Table 4.1
Rank of EVA

No	Code	Year	EVA In million	Rank
1	ASII	2003	3193245	3
2	AUTO	2003	24509	51
3	GJTL	2003	676105	12
4	AQUA	2003	41123	46
5	SMAR	2003	144258	27
6	INDF	2003	599907	13
7	MYOR	2003	9513	57
8	MLBI	2003	52366	43
9	STTP	2003	-3614	71
10	DAVO	2003	75580	33
11	GGRM	2003	1257982	6
12	HMSP	2003	1144035	7
13	RMBA	2003	36140	49
14	KLBF	2003	323185	21
15	TSPC	2003	150557	26
16	KAEF	2003	36610	48
17	INCI	2003	-13664	79
18	DPNS	2003	3084	63
19	INTP	2003	414732	18
20	SMCB	2003	46034	44
21	SMGR	2003	238727	23
22	BRPT	2003	-33568	82
23	AMFG	2003	27486	50
24	BRNA	2003	830	67

No	Code	Year	EVA	Rank
			In million	
25	INDR	2003	-180789	89
26	BATA	2003	8071	58
27	KBLM	2003	62813	39
28	LTLS	2003	14874	55
29	TURI	2003	944	66
30	HEXA	2003	-4101	72
31	ASII	2004	4044145	1
32	AUTO	2004	45925	45
33	GJTL	2004	183807	24
34	AQUA	2004	64257	37
35	SMAR	2004	-61681	84
36	INDF	2004	460789	16
37	MYOR	2004	22746	52
38	MLBI	2004	61142	40
39	STTP	2004	-5994	75
40	DAVO	2004	54279	42
41	GGRM	2004	1136302	8
42	HMSP	2004	1704789	5
43	RMBA	2004	-20880	81
44	KLBF	2004	392992	19
45	TSPC	2004	176652	25
46	KAEF	2004	-5263	73
47	INCI	2004	-9481	78
48	DPNS	2004	1225	65
49	INTP	2004	124987	28
50	SMCB	2004	-193943	90
51	SMGR	2004	425976	17
52	BRPT	2004	-150302	87
53	AMFG	2004	18729	54
54	BRNA	2004	-2383	69
55	INDR	2004	-159989	88
56	BATA	2004	6197	60
57	KBLM	2004	22071	53

No	Code	Year	EVA	Rank
			In million	
58	LTLS	2004	6583	59
59	TURI	2004	76604	32
60	HEXA	2004	85314	31
61	ASII	2005	3570841	2
62	AUTO	2005	105217	29
63	GJTL	2005	71714	34
64	AQUA	2005	36857	47
65	SMAR	2005	381008	20
66	INDF	2005	313366	22
67	MYOR	2005	-7159	77
68	MLBI	2005	66668	35
69	STTP	2005	-5325	74
70	DAVO	2005	-37125	83
71	GGRM	2005	1019434	9
72	HMSP	2005	2176744	4
73	RMBA	2005	-6213	76
74	KLBF	2005	577791	14
75	TSPC	2005	101103	30
76	KAEF	2005	-682	68
77	INCI	2005	-15106	80
78	DPNS	2005	1361	64
79	INTP	2005	554671	15
80	SMCB	2005	-109746	86
81	SMGR	2005	716731	11
82	BRPT	2005	979746	10
83	AMFG	2005	62834	38
84	BRNA	2005	3651	62
85	INDR	2005	-97222	85
86	BATA	2005	4252	61
87	KBLM	2005	-3129	70
88	LTLS	2005	13929	56
89	TURI	2005	56512	41
90	HEXA	2005	65735	36

4.3.2 Rank the MVA of the ninety data

The second process in the Rank Spearman is ranking the ninety MVA data

Table 4.2
Rank of MVA

No	Code	year	MVA	Rank
			In million	
1	ASII	2003	13743216	8
2	AUTO	2003	126731	53
3	GJTL	2003	1312847	28
4	AQUA	2003	408401	45
5	SMAR	2003	1249009	30
6	INDF	2003	3891918	18
7	MYOR	2003	-72418	72
8	MLBI	2003	391299	46
9	STTP	2003	-33516	66
10	DAVO	2003	9921	61
11	GGRM	2003	16457896	5
12	HMSP	2003	14936607	7
13	RMBA	2003	-489108	86
14	KLBF	2003	7631682	13
15	TSPC	2003	1231427	31
16	KAEF	2003	489043	41
17	INCI	2003	-88043	77
18	DPNS	2003	-80293	75
19	INTP	2003	4014222	17
20	SMCB	2003	594980	39
21	SMGR	2003	1475205	27
22	BRPT	2003	-520235	87
23	AMFG	2003	131333	52
24	BRNA	2003	-32334	65
25	INDR	2003	-1674124	89
26	BATA	2003	34150	58
27	KBLM	2003	-103548	78
28	LTLS	2003	-174399	82
29	TURI	2003	-2348	62
30	HEXA	2003	-22338	64

No	Code	year	MVA	Rank
			In million	
31	ASII	2004	28001170	2
32	AUTO	2004	286112	51
33	GJTL	2004	732919	36
34	AQUA	2004	359442	49
35	SMAR	2004	1175110	32
36	INDF	2004	3461470	20
37	MYOR	2004	115523	54
38	MLBI	2004	627178	38
39	STTP	2004	-64699	70
40	DAVO	2004	649724	37
41	GGRM	2004	15100521	6
42	HMSP	2004	24156593	4
43	RMBA	2004	-260118	85
44	KLBF	2004	3637922	19
45	TSPC	2004	1862387	23
46	KAEF	2004	384569	47
47	INCI	2004	-70750	71
48	DPNS	2004	1284267	29
49	INTP	2004	6786329	15
50	SMCB	2004	1749118	24
51	SMGR	2004	7639538	12
52	BRPT	2004	1607977	25
53	AMFG	2004	75053	56
54	BRNA	2004	-36449	67
55	INDR	2004	-1539466	88
56	BATA	2004	23569	59
57	KBLM	2004	-57918	69
58	LTLS	2004	-110792	79
59	TURI	2004	465895	43
60	HEXA	2004	309789	50

No	Code	year	MVA	Rank
			In million	
61	ASII	2005	26059681	3
62	AUTO	2005	761281	35
63	GJTL	2005	89543	55
64	AQUA	2005	473898	42
65	SMAR	2005	3077182	21
66	INDF	2005	4404296	16
67	MYOR	2005	-240643	84
68	MLBI	2005	803965	34
69	STTP	2005	-121463	80
70	DAVO	2005	-193457	83
71	GGRM	2005	10231772	9
72	HMSP	2005	35190570	1
73	RMBA	2005	-143767	81
74	KLBF	2005	8455804	10
75	TSPC	2005	856054	33
76	KAEF	2005	-9254	63
77	INCI	2005	-87340	76
78	DPNS	2005	45637	57
79	INTP	2005	8412580	11
80	SMCB	2005	1486321	26
81	SMGR	2005	6915669	14
82	BRPT	2005	2001862	22
83	AMFG	2005	411887	44
84	BRNA	2005	-73607	73
85	INDR	2005	-1886712	90
86	BATA	2005	17790	60
87	KBLM	2005	-38118	68
88	LTLS	2005	-75786	74
89	TURI	2005	369243	48
90	HEXA	2005	523290	40

4.3.3 Subtracting between ranking of EVA and MVA

After both variables are ranked, the next step is subtracting the rank between both variables of the ninety data, and then the result of subtraction must be multiplied or squared. Below is the subtraction rank data between EVA and MVA.

Table 4.3
Subtraction rank between EVA and MVA

No	Code	Year	Rank of	Rank of	Subtraction	Multiplication
			EVA	MVA	$d1$	$d1^2$
1	ASII	2003	3	8	5	25
2	AUTO	2003	51	53	2	4
3	GJTL	2003	12	28	16	256
4	AQUA	2003	46	45	-1	1
5	SMAR	2003	27	30	3	9
6	INDF	2003	13	18	5	25
7	MYOR	2003	57	72	15	225
8	MLBI	2003	43	46	3	9
9	STTP	2003	71	66	-5	25
10	DAVO	2003	33	61	28	784
11	GGRM	2003	6	5	-1	1
12	HMSP	2003	7	7	0	0
13	RMBA	2003	49	86	37	1369
14	KLBF	2003	21	13	-8	64
15	TSPC	2003	26	31	5	25
16	KAEF	2003	48	41	-7	49
17	INCI	2003	79	77	-2	4
18	DPNS	2003	63	75	12	144
19	INTP	2003	18	17	-1	1
20	SMCB	2003	44	39	-5	25
21	SMGR	2003	23	27	4	16
22	BRPT	2003	82	87	5	25
23	AMFG	2003	50	52	2	4
						$\Sigma = 3090$

No	Code	Year	Rank of	Rank of	Subtraction	Multiplication
			EVA	MVA	$d1$	$d1^2$
24	BRNA	2003	67	65	-2	4
25	INDR	2003	89	89	0	0
26	BATA	2003	58	58	0	0
27	KBLM	2003	39	78	39	1521
28	LTLS	2003	55	82	27	729
29	TURI	2003	66	62	-4	16
30	HEXA	2003	72	64	-8	64
31	ASII	2004	1	2	1	1
32	AUTO	2004	45	51	6	36
33	GJTL	2004	24	36	12	144
34	AQUA	2004	37	49	12	144
35	SMAR	2004	84	32	-52	2704
36	INDF	2004	16	20	4	16
37	MYOR	2004	52	54	2	4
38	MLBI	2004	40	38	-2	4
39	STTP	2004	75	70	-5	25
40	DAVO	2004	42	37	-5	25
41	GGRM	2004	8	6	-2	4
42	HMSP	2004	5	4	-1	1
43	RMBA	2004	81	85	4	16
44	KLBF	2004	19	19	0	0
45	TSPC	2004	25	23	-2	4
46	KAEF	2004	73	47	-26	676
47	INCI	2004	78	71	-7	49
48	DPNS	2004	65	29	-36	1296
49	INTP	2004	28	15	-13	169
50	SMCB	2004	90	24	-66	4356
51	SMGR	2004	17	12	-5	25
52	BRPT	2004	87	25	-62	3844
53	AMFG	2004	54	56	2	4
54	BRNA	2004	69	67	-2	4
55	INDR	2004	88	88	0	0
						$\Sigma = 15885$

No	Code	Year	Rank of	Rank of	Subtraction	Multiplication
			EVA	MVA	$d1$	$d1^2$
56	BATA	2004	60	59	-1	1
57	KBLM	2004	53	69	16	256
58	LTLS	2004	59	79	20	400
59	TURI	2004	32	43	11	121
60	HEXA	2004	31	50	19	361
61	ASII	2005	2	3	1	1
62	AUTO	2005	29	35	6	36
63	GJTL	2005	34	55	21	441
64	AQUA	2005	47	42	-5	25
65	SMAR	2005	20	21	1	1
66	INDF	2005	22	16	-6	36
67	MYOR	2005	77	84	7	49
68	MLBI	2005	35	34	-1	1
69	STTP	2005	74	80	6	36
70	DAVO	2005	83	83	0	0
71	GGRM	2005	9	9	0	0
72	HMSP	2005	4	1	-3	9
73	RMBA	2005	76	81	5	25
74	KLBF	2005	14	10	-4	16
75	TSPC	2005	30	33	3	9
76	KAEF	2005	68	63	-5	25
77	INCI	2005	80	76	-4	16
78	DPNS	2005	64	57	-7	49
79	INTP	2005	15	11	-4	16
80	SMCB	2005	86	26	-60	3600
81	SMGR	2005	11	14	3	9
82	BRPT	2005	10	22	12	144
83	AMFG	2005	38	44	6	36
84	BRNA	2005	62	73	11	121
85	INDR	2005	85	90	5	25
86	BATA	2005	61	60	-1	1
87	KBLM	2005	70	68	-2	4
88	LTLS	2005	56	74	18	324
89	TURI	2005	41	48	7	49
90	HEXA	2005	36	40	4	16
						$\Sigma = 6259$

After doing the steps, the next step is to find out value of $d1^2$. The value of $d1^2$ is the total amount of multiplication of rank subtraction both variables. One of the Rank Spearman analysis formulas is $d1^2$ and in this research the value $d1^2$ is 25234 from the total of 6259 + 15880 + 3090.

4.3.4 Result of Data Analysis

Formula of Rank Spearman correlation is

$$r_s = 1 - \frac{6 \times \sum_{i=1}^N d1^2}{N^3 - N}$$

N is the amount of data and the $d1$ is the result of subtracting between rank of EVA and rank of MVA in a whole year. Based on the table above, the researcher implies the result to the formula.

$$r_s = 1 - \frac{6 \times \sum_{i=1}^N 25234}{90^3 - 90} = 0.792$$

Based on the table 3.2, in a whole of years, it shows that between EVA and MVA have a **strong relation** because the result of calculation is between 0.60 – 0.799.

4.3.2. Result of Significant Test

The purpose of significant test in this research is to test the validity of the Rank Spearman analysis, because according the calculation of Rank Spearman analysis (using thirty data as the representation), the alternative hypothesis tends to be accepted on this research. But to make it sure, the researcher will test the hypothesis, if the number of sample is uncertainty by comparing z-table and z-statistic. Some steps to test the hypotheses.

1. Hypothesis formulation

The null hypothesis (Ho) : There is no relationship between MVA and EVA

The alternative hypothesis (Ha): There is a relationship between MVA and EVA

2. Do the two tailed testing, and determine significant level (α) 5 %.

3. The ways to conclude

- Compare z-statistics with z-table

Formula of z-statistics is determined by $Z = rs\sqrt{N-1}$

- If z-statistics < z-table, So Ho is accepted
- If z-statistics > z-table, So Ho is rejected

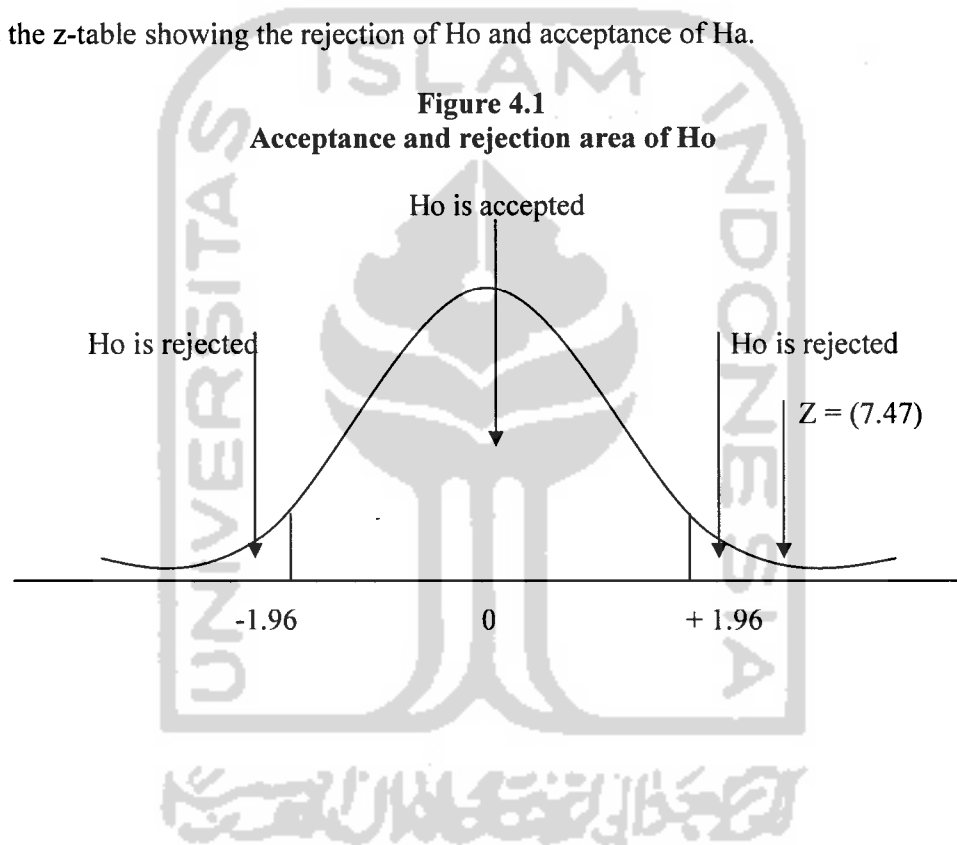
The value of z, determined from the z-table is 1.96, because the researcher assumed the level of signification is 5% (because it is two tailed testing, so the researcher found the level of significant in the bottom of column is 2.5%, from the table) and the level of trust is 95%.

• Based on Probability

- Probability $\geq 0,05$, so Ho is accepted
- Probability $\leq 0,05$, so Ho is rejected

4.4.4 Result of Significant Test whole of years

The value of correlation analysis result of EVA and MVA is $r_s = 0.792$, where the amount of sample (N) = 90. Based on this, the researcher calculates the z-statistic, is: $Z = 0.792\sqrt{90-1} = 7.47$, because the value of z-table is 1.96. It means that z-statistic is more than z-table, so the H_0 hypothesis is rejected. Below is the z-table showing the rejection of H_0 and acceptance of H_a .



The other comparison is probability value between value of significant level (α) and the value of significant level from SPSS version 15. From the table of the significant level value in the row of Sig. (2-tailed) that is obtained from SPSS version 15, it is 0.000. This value is less than the significant level (α) which is 0.05. So based on the two comparisons between z-statistic and z-table and comparison between level of significant (α) and the level of significant from SPSS, the null hypothesis is rejected and the alternative hypothesis is accepted. That is why the researcher concludes statistically, there is a relationship between MVA and EVA significantly.

Table.4.4
Rank Spearman Analysis

Correlations

			EVA	MVA
Spearman's rho	EVA	Correlation Coefficient	1.000	.792(**)
		Sig. (2-tailed)	.	.000
		N	90	90
	MVA	Correlation Coefficient	.792(**)	1.000
		Sig. (2-tailed)	.000	.
		N	90	90

** Correlation is significant at the 0.01 level (2-tailed).

4.4. Result of Research

Acceptance of alternative hypothesis means that there is a relationship between MVA and EVA showing that price of share, which is the component of MVA represents the performance of management that in this case as EVA. MVA describes the market expectation of company performance in the future. This is in line with EVA that appraises the management performance in order to maximize value of shareholders.

This research is consistent with the previous research conducted by Sri Isworo Adiningsih and Sumarni, the samples in this research were ten companies chosen randomly. Their result shows that there is positive relationship between MVA and EVA from year 1998 until 2002. Besides, Yevi Dwitayanti was also done the same research on the influence of EVA and MVA. She used 30 companies as the samples, and the period of her research was from 1998 until 2001 financial period. The result concludes that MVA has been influenced by EVA, significantly.

In this research, the result of Rank Spearman from year 2003 until 2005 shows that there is a significant relation between MVA and EVA. In year 2003 until 2005, based on table 3.2 the relation is strong because EVA has a significant relation with MVA. Then, the researcher assumes that if EVA of a company is high it will affect on the high value of MVA, and the increasing of MVA (assumed as the market expectation) will influence the increasing of investor responses, for EVA is a tool to describe the management performance in order to increase the shareholder wealth, where MVA is the market expectation.

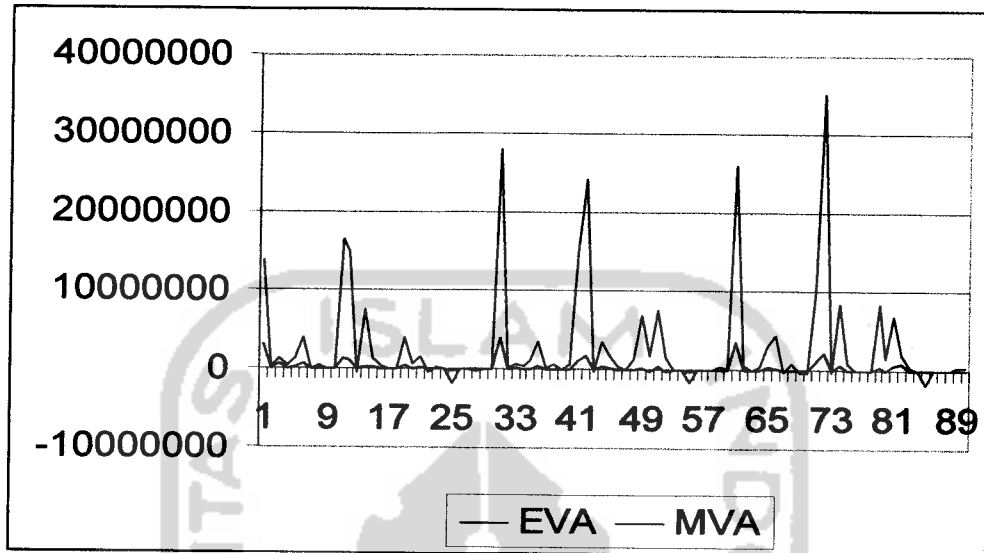
There is an increasing number (nein) of companies which have negative EVA. According to SWA magazine, this occurs because in 2004 and 2005 the bank interest rates affected the higher capital cost of companies and also the increase of oil price in October 2005, causing the business activities weak and the costumer purchasing power decreases.

4.5. Investor's Responses

According SWAmagazine in 2003, state that the higher of MVA value will increasing higher appreciation and respond from investors. Therefore, the researcher represents the investor's responses as the MVA, because the objective of it is to maximize the welfare of shareholders in cumulative. Based on those reasons, the researcher assumes that if MVA of companies is higher than previous year so the most investors will probably obstinate their investment or even they will increase their investment on those companies.

The researcher compares between the fluctuation of EVA and fluctuation of MVA in the research year if the fluctuation of EVA is in line with the fluctuation of MVA, it means that EVA or value of company has significant contribution to build investor's responses. The graphic will show the fluctuation, the blue line represents EVA value and the pink line represents MVA value. Below is the graphic of fluctuation in year 2003-2005

Figure 4.2
Fluctuation of EVA and MVA



Based on the graphic, the higher MVA is shown by number one, thirty one, and sixty one, represented by PT. Astra International Tbk. The other higher MVA are also shown by number eleven, twelve, forty one and forty two which are represented by PT. Gudang Garam and PT. HM Sampoerna. This fluctuation graphic mostly shows that if a company has a positive EVA, so they have a positive MVA. The fluctuation between both variables is positively in one line. If EVA of a company is positive, it is possible to create the better MVA, and in this research it is represented as investor responses.

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Based on the analysis in the chapter four, this research uses thirty manufacture companies as the research sample with the three periods of financial year which is 2003 until 2005. From the analysis of non parametric statistics using Rank Spearman correlation test, it can be concluded that H_0 is rejected. It means there is significant correlation between EVA and MVA. This conclusion is resulted by comparing the significant level, which in this research is $\alpha = 5\%$, and because it is two tailed, so the value of z table is ± 1.96 and in fact, the z-table is less than z-statistics in the three of the research financial periods. The significant relation in this research represents the market expectation to the companies' performance in the future which is in line with the EVA which represents the management performance in order to maximize value of shareholders.

Because EVA has significant relation with MVA, the researcher assumes that if EVA of a company is high it will affect on the high value of MVA, and the increasing of MVA (assumes as the market expectation) will influence the increasing of investor responses to invest the capital. This is because EVA is a tool to describe the management performance in order to increase the shareholder wealth, whereas MVA is the market expectation.

Therefore, based on the some fluctuation graphics, investor responses to the more or less of EVA value have positive fluctuation. It means that most of the investors' behaviors to invest their capital in this research are influenced by more or less of EVA's companies. So, the researcher advice for the companies to increase their company value and in this research surely the tool is EVA. Company always related to three elements such as revenue, costs, and capital. Three of them are component of EVA, thus to increasing EVA company should increasing those element.

Researcher suggests to increasing EVA there are four roles. First, increasing the profit from the invested capital such as decreasing production cost and operation cost and maximize profit. Second, company invests the capital carefully and make sure that the additional investment will be covered by the additional profit. Third, liquidate the assets which can't produce the profit more than invested capital. Fourth, capital restructuring, this role used to decrease cost of capital. The success of the following roles is encouraged by the human resource and to maximize the human resource the company should. First, recruit, train and hire the employees who participate in giving value added for company. Second, build the good system of human resource especially in payment and employee performance that it are related with EVA achievement. If company's EVA is good the employee will achieve good compensation, vice versa.

5.2 Recommendation

Recommendation is made to the next researchers who conduct the same research about the analysis of the relation between EVA and MVA which is suggested below. The researcher opinion to make this research perfect in the future expectation is that there will be other researchers who will use different way to conduct the same research, in order to compare the result of the research, some different ways are:

1. Use the longer period of time than this research, aims to make the result more perfect or reliable in the future.
2. For the next researcher, it is suggested to use the more sample number in order to more represented the whole of the companies in Jakarta Stock Exchange
3. The other statistical tool is needed to compare the result of the same research in the future, so the next researcher about the relation of EVA and MVA is suggested to use other statistical tools.
4. Recommendation for the company management to use EVA as the alternative tool to measure the company performance because it can provide reliable and comprehensive measurement for companies.
5. Recommendation for the investor, EVA is the guidance when deciding to invest the capital in a company, because it can measure the companies' ability to produce the return degree of that investment, and the capital cost can be measured by WACC, which measures the average of capital components.

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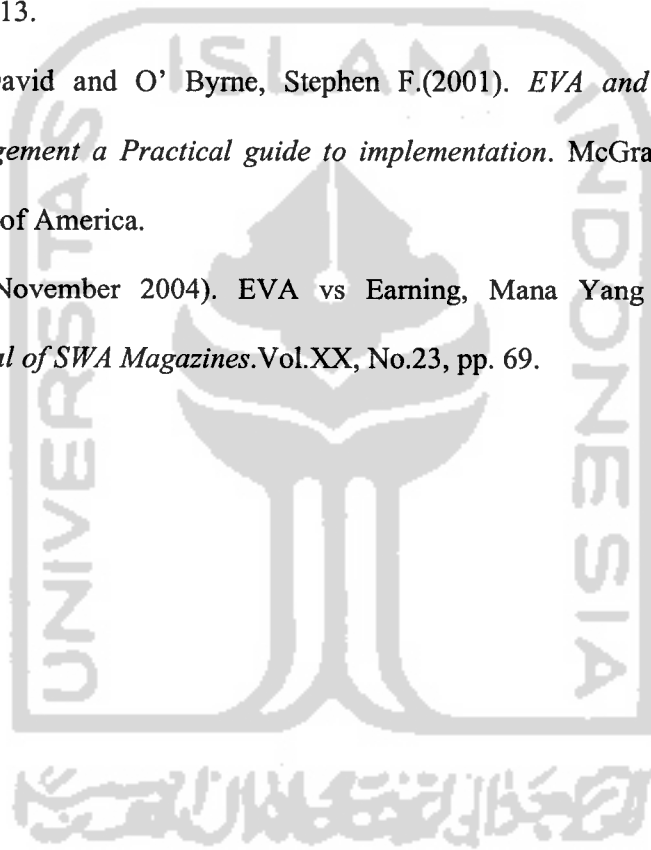
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APPENDICES 1
THE THIRTY COMPANIES WHICH ARE CHOSEN
RANDOMLY

No	Code	Company	Specification
1	ASII	PT Astra International Tbk.	Automotive and Components
2	AUTO	PT Astra Otoparts Tbk.	Automotive and Components
3	GJTL	PT Gajah Tunggal Tbk.	Automotive and Components
4	AQUA	PT Aqua Golden Misisipi Tbk.	Food and Beverages
5	SMAR	PT Sinar Mas Agro Tbk.	Food and Beverages
6	INDF	PT Indofood Sukses Makmur Tbk.	Food and Beverages
7	MYOR	PT Mayora Tbk.	Food and Beverages
8	MLBI	PT Multi Bintang Indonesia Tbk.	Food and Beverages
9	STTP	PT Siantar TOP Tbk.	Food and Beverages
10	DAVO	PT Davo Mas Abadi Tbk.	Food and Beverages
11	GGRM	PT Gudang Garam Tbk.	Tobacco Manufacturers
12	HMSP	PT Hanjaya Mandala Sampoerna	Tobacco Manufacturers
13	RMBA	PT Bentoel International Tbk.	Tobacco Manufacturers
14	KLBF	PT Kalbe Farma Tbk.	Pharmaceuticals
15	TSPC	PT Tempo Scan Pacific Tbk.	Pharmaceuticals
16	KAEF	PT Kimia Farma Tbk.	Pharmaceuticals
17	INCI	PT Intan Wijaya Tbk.	Chemicals
18	DPNS	PT Duta Pertiwi Nusantara Tbk.	Chemicals
19	INTP	PT Indocement Tunggal Prakarsa	Cement
20	SMCB	PT Semen Cibinong Tbk.	Cement
21	SMGR	PT Semen Gresik (Persero) Tbk.	Cement
22	BRPT	PT Barito Pacific Timber Tbk.	Wood Industries
23	AMFG	PT Asahimas Flat Glass Tbk.	Ceramics, Glass, Porcelain
24	BRNA	PT Berlina Tbk.	Plastics and Packaging
25	INDR	PT Indorama Syntetics Tbk.	Textiles, Garment
26	BATA	PT Sepatu Bata Tbk.	Footwear
27	KBLM	PT Kabelindo Murni Tbk.	Cable
28	LTLS	PT Lautan Luas Tbk.	Wholesale
29	TURI	PT Tunas Ridean Tbk.	Wholesale
30	HEXA	PT Hexindo Tbk.	Wholesale

APPENDICES 2
NOPAT 2003

No	Code	Earning After Tax	Interest Exp.	NOPAT
		(in Million)	(in Million)	(in Million)
1	ASII	4421583	656056	5077639
2	AUTO	206398	8546	214944
3	GJTL	871131	66339	937470
4	AQUA	63246	173	63419
5	SMAR	69681	163114	232795
6	INDF	603481	968233	1571714
7	MYOR	84617	61045	145662
8	MLBI	90222	4	90226
9	STTP	31182	3734	34916
10	DAVO	92016	5972	97988
11	GGRM	1838673	338744	2177417
12	HMSP	1406844	337660	1744504
13	RMBA	-23682	37445	13763
14	KLBF	322885	66119	389004
15	TSPC	322698	2853	325551
16	KAEF	45494	12316	57810
17	INCI	8007	165	8172
18	DPNS	-1168	153	-1015
19	INTP	670290	233968	904258
20	SMCB	174117	47020	221137
21	SMGR	372509	403022	775531
22	BRPT	229581	454658	684239
23	AMFG	163299	7970	171269
24	BRNA	8245	10698	18943
25	INDR	40875	55055	95930
26	BATA	35931	4577	40508
27	KBLM	-45630	6245	-39385
28	LTLS	7647	70560	78207
29	TURI	81112	3844	84956
30	HEXA	42514	6596	49110

NOPAT 2004

No	Code	Earning After Tax	Interest Exp.	NOPAT
		(in Million)	(in Million)	(in Million)
1	ASII	5405506	500692	5906198
2	AUTO	223158	10997	234155
3	GJTL	478150	44922	523072
4	AQUA	91582	243	91825
5	SMAR	-107960	173328	65368
6	INDF	386919	943855	1330774
7	MYOR	85107	40186	125293
8	MLBI	87313	56	87369
9	STTP	28599	7162	35761
10	DAVO	98958	8518	107476
11	GGRM	1790209	329208	2119417
12	HMSP	1991852	356756	2348608
13	RMBA	80938	24529	105467
14	KLBF	450698	83836	534534
15	TSPC	323093	2251	325344
16	KAEF	45494	2600	48094
17	INCI	11828	322	12150
18	DPNS	6466	82	6548
19	INTP	116023	185488	301511
20	SMCB	-533130	53930	-479200
21	SMGR	508916	238262	747178
22	BRPT	-143276	152396	9120
23	AMFG	206791	6450	213241
24	BRNA	16037	12086	28123
25	INDR	46012	46782	92794
26	BATA	35309	5449	40758
27	KBLM	-25319	8657	-16662
28	LTLS	51917	89858	141775
29	TURI	152731	2432	155163
30	HEXA	91418	4067	95485

NOPAT 2005

No	Code	Earning After Tax	Interest Exp.	NOPAT
		(in Million)	(in Million)	(in Million)
1	ASII	5457285	421844	5879129
2	AUTO	279027	23387	302414
3	GJTL	346835	175101	521936
4	AQUA	64350	261	64611
5	SMAR	304203	126066	430269
6	INDF	124018	827817	951835
7	MYOR	45730	35830	81560
8	MLBI	87014	892	87906
9	STTP	10637	3221	13858
10	DAVO	90069	7090	97159
11	GGRM	1889646	520855	2410501
12	HMSP	2383066	300170	2683236
13	RMBA	108166	34535	142701
14	KLBF	653329	92975	746304
15	TSPC	296825	4294	301119
16	KAEF	52827	8918	61745
17	INCI	11590	668	12258
18	DPNS	4477	153	4630
19	INTP	739686	263474	1003160
20	SMCB	-334081	83703	-250378
21	SMGR	1022568	157039	1179607
22	BRPT	686842	83258	770100
23	AMFG	212553	7774	220327
24	BRNA	3322	23937	27259
25	INDR	20404	90240	110644
26	BATA	25086	6256	31342
27	KBLM	14127	11632	25759
28	LTLS	52425	81364	133789
29	TURI	142732	4707	147439
30	HEXA	97771	7212	104983

APPENDICES 3
Beginning Capital 2003

No	Code	Total Liabilities	Total Equity	Beginning Capital
		(in Million)	(in Million)	(in Million)
1	ASII	17264295	6498561	23762856
2	AUTO	663912	1047092	1711004
3	GJTL	12258083	429553	12687636
4	AQUA	310082	220765	530847
5	SMAR	3904640	-334627	3570013
6	INDF	10713140	3662698	14375838
7	MYOR	579940	743179	1323119
8	MLBI	192096	282941	475037
9	STTP	201135	269316	470451
10	DAVO	293166	498631	791797
11	GGRM	5742994	9709701	15452695
12	HMSP	4422001	5200893	9622894
13	RMBA	976813	1095089	2071902
14	KLBF	1364125	489918	1854043
15	TSPC	319391	1423573	1742964
16	KAEF	361248	277297	638545
17	INCI	25417	138643	164060
18	DPNS	14674	109890	124564
19	INTP	7629129	3808395	11437524
20	SMCB	5205296	2508495	7713791
21	SMGR	3639858	3181038	6820896
22	BRPT	5551208	1226949	6778157
23	AMFG	776621	725817	1502438
24	BRNA	97803	142734	240537
25	INDR	2820089	2017659	4837748
26	BATA	60931	149150	210081
27	KBLM	41338	181948	223286
28	LTLS	457993	396699	854692
29	TURI	690418	420848	1111266
30	HEXA	461046	177738	638784

Beginning Capital 2004

No	Code	Total Liabilities	Total Equity	Beginning Capital
		(in Million)	(in Million)	(in Million)
1	ASII	13898301	10863041	24761342
2	AUTO	623945	1194707	1818652
3	GJTL	10921544	1326281	12247825
4	AQUA	247497	269724	517221
5	SMAR	3883276	-253294	3629982
6	INDF	10552330	4093881	14646211
7	MYOR	469490	804378	1273868
8	MLBI	214707	268297	483004
9	STTP	205009	300499	505508
10	DAVO	303427	590647	894074
11	GGRM	6368018	10970871	17338889
12	HMSP	4197837	5768407	9966244
13	RMBA	1014340	1000762	2015102
14	KLBF	1424896	828958	2253854
15	TSPC	303361	1557613	1860974
16	KAEF	614144	754001	1368145
17	INCI	24156	144963	169119
18	DPNS	29186	103233	132419
19	INTP	5611608	4533458	10145066
20	SMCB	4990592	2657050	7647642
21	SMGR	3168286	3333774	6502060
22	BRPT	3744495	-430120	3314375
23	AMFG	626771	858047	1484818
24	BRNA	113269	138224	251493
25	INDR	2581733	1948436	4530169
26	BATA	73833	158431	232264
27	KBLM	70040	136318	206358
28	LTLS	775171	399392	1174563
29	TURI	1009321	475730	1485051
30	HEXA	377700	206811	584511

Beginning Capital 2005

No	Code	Total Liabilities	Total Equity	Beginning Capital
		(in Million)	(in Million)	(in Million)
1	ASII	19425440	15233543	34658983
2	AUTO	868114	1398514	2266628
3	GJTL	4656619	1684537	6341156
4	AQUA	308620	355338	663958
5	SMAR	4321273	-348598	3972675
6	INDF	10727582	4189916	14917498
7	MYOR	398172	869242	1267414
8	MLBI	303532	249535	553067
9	STTP	152214	317963	470177
10	DAVO	888346	689605	1577951
11	GGRM	8394061	12183853	20577914
12	HMSP	6522408	4859430	11381838
13	RMBA	904084	1052739	1956823
14	KLBF	2284131	1598650	3882781
15	TSPC	379832	1686446	2066278
16	KAEF	358855	814584	1173439
17	INCI	26492	153418	179910
18	DPNS	30883	110051	140934
19	INTP	5115219	4655793	9771012
20	SMCB	5366846	2153557	7520403
21	SMGR	2960744	3642437	6603181
22	BRPT	3900577	-562259	3338318
23	AMFG	532823	1031163	1563986
24	BRNA	245695	142607	388302
25	INDR	2743170	2194257	4937427
26	BATA	90025	170710	260735
27	KBLM	105817	127718	233535
28	LTLS	904164	450186	1354350
29	TURI	1409485	593307	2002792
30	HEXA	352999	283110	636109

APPENDICES 4
Kd* 2003

No	Code	Interest Exp.	Tot. Liabilities	Kd	T=30%	Kd*
		(In million)	(In million)			
1	ASII	656056	17264295	3.80%	1.14%	2.66%
2	AUTO	8546	663912	1.29%	0.39%	0.90%
3	GJTL	66339	12258083	0.54%	0.16%	0.38%
4	AQUA	173	310082	0.06%	0.02%	0.04%
5	SMAR	163114	3904640	4.18%	1.25%	2.92%
6	INDF	968233	10713140	9.04%	2.71%	6.33%
7	MYOR	61045	579940	10.53%	3.16%	7.37%
8	MLBI	4	192096	0.00%	0.00%	0.00%
9	STTP	3734	201135	1.86%	0.56%	1.30%
10	DAVO	5972	293166	2.04%	0.61%	1.43%
11	GGRM	338744	5742994	5.90%	1.77%	4.13%
12	HMSP	337660	4422001	7.64%	2.29%	5.35%
13	RMBA	37445	976813	3.83%	1.15%	2.68%
14	KLBF	66119	1364125	4.85%	1.45%	3.39%
15	TSPC	2853	319391	0.89%	0.27%	0.63%
16	KAEF	12316	361248	3.41%	1.02%	2.39%
17	INCI	165	25417	0.65%	0.19%	0.45%
18	DPNS	153	14674	1.05%	0.31%	0.73%
19	INTP	233968	7629129	3.07%	0.92%	2.15%
20	SMCB	47020	5205296	0.90%	0.27%	0.63%
21	SMGR	403022	3639858	11.07%	3.32%	7.75%
22	BRPT	454658	5551208	8.19%	2.46%	5.73%
23	AMFG	7970	776621	1.03%	0.31%	0.72%
24	BRNA	10698	97803	10.94%	3.28%	7.66%
25	INDR	55055	2820089	1.95%	0.59%	1.37%
26	BATA	4577	60931	7.51%	2.25%	5.26%
27	KBLM	6245	41338	15.11%	4.53%	10.57%
28	LTLS	70560	457993	15.41%	4.62%	10.78%
29	TURI	3844	690418	0.56%	0.17%	0.39%
30	HEXA	6596	461046	1.43%	0.43%	1.00%

Kd* 2004

No	Code	Interest Exp.	Tot. Liabilities	Kd	T=30%	Kd*
		(In million)	(In million)			
1	ASII	500692	13898301	3.60%	1.08%	2.52%
2	AUTO	10997	623945	1.76%	0.53%	1.23%
3	GJTL	44922	10921544	0.41%	0.12%	0.29%
4	AQUA	243	247497	0.10%	0.03%	0.07%
5	SMAR	173328	3883276	4.46%	1.34%	3.12%
6	INDF	943855	10552330	8.94%	2.68%	6.26%
7	MYOR	40186	469490	8.56%	2.57%	5.99%
8	MLBI	56	214707	0.03%	0.01%	0.02%
9	STTP	7162	205009	3.49%	1.05%	2.45%
10	DAVO	8518	303427	2.81%	0.84%	1.97%
11	GGRM	329208	6368018	5.17%	1.55%	3.62%
12	HMSP	356756	4197837	8.50%	2.55%	5.95%
13	RMBA	24529	1014340	2.42%	0.73%	1.69%
14	KLBF	83836	1424896	5.88%	1.77%	4.12%
15	TSPC	2251	303361	0.74%	0.22%	0.52%
16	KAEF	2600	614144	0.42%	0.13%	0.30%
17	INCI	322	24156	1.33%	0.40%	0.93%
18	DPNS	82	29186	0.28%	0.08%	0.20%
19	INTP	185488	5611608	3.31%	0.99%	2.31%
20	SMCB	53930	4990592	1.08%	0.32%	0.76%
21	SMGR	238262	3168286	7.52%	2.26%	5.26%
22	BRPT	152396	3744495	4.07%	1.22%	2.85%
23	AMFG	6450	626771	1.03%	0.31%	0.72%
24	BRNA	12086	113269	10.67%	3.20%	7.47%
25	INDR	49502	2581733	1.92%	0.58%	1.34%
26	BATA	5449	73833	7.38%	2.21%	5.17%
27	KBLM	8657	70040	12.36%	3.71%	8.65%
28	LTLS	89858	775171	11.59%	3.48%	8.11%
29	TURI	2432	1009321	0.24%	0.07%	0.17%
30	HEXA	4067	377700	1.08%	0.32%	0.75%

Kd* 2005

No	Code	Interest Exp.	Tot. Liabilities	Kd	T=30%	Kd*
		(In million)	(In million)			
1	ASII	421844	19425440	2.17%	0.65%	1.52%
2	AUTO	23387	868114	2.69%	0.81%	1.89%
3	GJTL	175101	4656619	3.76%	1.13%	2.63%
4	AQUA	261	308620	0.08%	0.03%	0.06%
5	SMAR	126066	4321273	2.92%	0.88%	2.04%
6	INDF	827817	10727582	7.72%	2.32%	5.40%
7	MYOR	35830	398172	9.00%	2.70%	6.30%
8	MLBI	892	303532	0.29%	0.09%	0.21%
9	STTP	3221	152214	2.12%	0.63%	1.48%
10	DAVO	7090	888346	0.80%	0.24%	0.56%
11	GGRM	520855	8394061	6.21%	1.86%	4.34%
12	HMSP	300170	6522408	4.60%	1.38%	3.22%
13	RMBA	34535	904084	3.82%	1.15%	2.67%
14	KLBF	92975	2284131	4.07%	1.22%	2.85%
15	TSPC	4294	379832	1.13%	0.34%	0.79%
16	KAEF	8918	358855	2.49%	0.75%	1.74%
17	INCI	668	26492	2.52%	0.76%	1.77%
18	DPNS	153	30883	0.50%	0.15%	0.35%
19	INTP	263474	5115219	5.15%	1.55%	3.61%
20	SMCB	83703	5366846	1.56%	0.47%	1.09%
21	SMGR	157039	2960744	5.30%	1.59%	3.71%
22	BRPT	83258	3900577	2.13%	0.64%	1.49%
23	AMFG	7774	532823	1.46%	0.44%	1.02%
24	BRNA	23937	245695	9.74%	2.92%	6.82%
25	INDR	90240	2743170	3.29%	0.99%	2.30%
26	BATA	6256	90025	6.95%	2.08%	4.86%
27	KBLM	11632	105817	10.99%	3.30%	7.69%
28	LTLS	81364	904164	9.00%	2.70%	6.30%
29	TURI	4707	1409485	0.33%	0.10%	0.23%
30	HEXA	7212	352999	2.04%	0.61%	1.43%

APPENDICES 5
Ke 2003

No	Code	EPS	Price of Share	Ke
		(In million)	(In million)	
1	ASII	1096	5000	21.92%
2	AUTO	273	1550	17.61%
3	GJTL	275	550	50.00%
4	AQUA	4805	47800	10.05%
5	SMAR	234	3075	7.61%
6	INDF	64	800	8.00%
7	MYOR	110	875	12.57%
8	MLBI	4282	32000	13.38%
9	STTP	24	180	13.33%
10	DAVO	15	410	3.66%
11	GGRM	956	13600	7.03%
12	HMSP	313	4475	6.99%
13	RMBA	-4	90	-4.44%
14	KLBF	40	1000	4.00%
15	TSPC	717	5900	12.15%
16	KAEF	8	210	3.81%
17	INCI	47	300	15.67%
18	DPNS	-9	235	-3.83%
19	INTP	182	2125	8.56%
20	SMCB	23	405	5.68%
21	SMGR	628	7850	8.00%
22	BRPT	88	270	32.59%
23	AMFG	376	1975	19.04%
24	BRNA	119	1600	7.44%
25	INDR	62	525	11.81%
26	BATA	2764	14100	19.60%
27	KBLM	-41	70	-58.57%
28	LTLS	10	285	3.51%
29	TURI	58	300	19.33%
30	HEXA	253	925	27.35%

Ke 2004

No	Code	EPS	Price of Share	Ke
		(in million)	(in million)	
1	ASII	1335	9600	13.91%
2	AUTO	291	1925	15.12%
3	GJTL	151	650	23.23%
4	AQUA	4850	47800	10.15%
5	SMAR	-73	3100	-2.35%
6	INDF	41	800	5.13%
7	MYOR	111	1200	9.25%
8	MLBI	4144	42500	9.75%
9	STTP	22	180	12.22%
10	DAVO	16	200	8.00%
11	GGRM	930	13550	6.86%
12	HMSP	454	6650	6.83%
13	RMBA	12	110	10.91%
14	KLBF	55	550	10.00%
15	TSPC	718	7600	9.45%
16	KAEF	14	205	6.83%
17	INCI	65	440	14.77%
18	DPNS	51	1000	5.10%
19	INTP	32	3075	1.04%
20	SMCB	-70	575	-12.17%
21	SMGR	858	18500	4.64%
22	BRPT	-55	450	-12.22%
23	AMFG	476	2150	22.14%
24	BRNA	232	1475	15.73%
25	INDR	70	625	11.20%
26	BATA	2716	14000	19.40%
27	KBLM	-23	70	-32.86%
28	LTLS	67	370	18.11%
29	TURI	109	675	16.15%
30	HEXA	109	3075	3.54%

Ke 2005

No	Code	EPS	Price of Share	Ke
		(In million)	(In million)	
1	ASII	1348	10200	13.22%
2	AUTO	362	2800	12.93%
3	GJTL	109	560	19.46%
4	AQUA	4889	63000	7.76%
5	SMAR	106	950	11.16%
6	INDF	13	910	1.43%
7	MYOR	60	820	7.32%
8	MLBI	4130	50000	8.26%
9	STTP	8	150	5.33%
10	DAVO	15	80	18.75%
11	GGRM	982	11650	8.43%
12	HMSP	544	8900	6.11%
13	RMBA	16	135	11.85%
14	KLBF	64	990	6.46%
15	TSPC	660	5650	11.68%
16	KAEF	10	145	6.90%
17	INCI	64	365	17.53%
18	DPNS	29	1010	2.87%
19	INTP	201	3550	5.66%
20	SMCB	-44	475	-9.26%
21	SMGR	1724	17800	9.69%
22	BRPT	262	550	47.64%
23	AMFG	490	3325	14.74%
24	BRNA	48	1000	4.80%
25	INDR	31	470	6.60%
26	BATA	1930	14500	13.31%
27	KBLM	13	80	16.25%
28	LTLS	67	480	13.96%
29	TURI	102	690	14.78%
30	HEXA	116	960	12.08%

APPENDICES 6
Wd & We 2003

No	Code	Total Liabilities (In million)	Total Equity (In million)	Liabilities + Equity (In million)	Wd	We
1	ASII	17264295	6498561	23762856	72.65%	27.35%
2	AUTO	663912	1047092	1711004	38.80%	61.20%
3	GJTL	12258083	429553	12687636	96.61%	3.39%
4	AQUA	310082	220765	530847	58.41%	41.59%
5	SMAR	3904640	-334627	3570013	109.37%	-9.37%
6	INDF	10713140	3662698	14375838	74.52%	25.48%
7	MYOR	579940	743179	1323119	43.83%	56.17%
8	MLBI	192096	282941	475037	40.44%	59.56%
9	STTP	201135	269316	470451	42.75%	57.25%
10	DAVO	293166	498631	791797	37.03%	62.97%
11	GGRM	5742994	9709701	15452695	37.16%	62.84%
12	HMSP	4422001	5200893	9622894	45.95%	54.05%
13	RMBA	976813	1095089	2071902	47.15%	52.85%
14	KLBF	1364125	489918	1854043	73.58%	26.42%
15	TSPC	319391	1423573	1742964	18.32%	81.68%
16	KAEF	361248	677297	1038545	34.78%	65.22%
17	INCI	25417	138643	164060	15.49%	84.51%
18	DPNS	14674	109890	124564	11.78%	88.22%
19	INTP	7629129	3808395	11437524	66.70%	33.30%
20	SMCB	5205296	2508495	7713791	67.48%	32.52%
21	SMGR	3639858	3181038	6820896	53.36%	46.64%
22	BRPT	5551208	1226949	6778157	81.90%	18.10%
23	AMFG	776621	725817	1502438	51.69%	48.31%
24	BRNA	97803	142734	240537	40.66%	59.34%
25	INDR	2820089	2017659	4837748	58.29%	41.71%
26	BATA	60931	149150	210081	29.00%	71.00%
27	KBLM	41338	181948	223286	18.51%	81.49%
28	LTLS	457993	396699	854692	53.59%	46.41%
29	TURI	690418	420848	1111266	62.13%	37.87%
30	HEXA	461046	177738	638784	72.18%	27.82%

Wd & We 2004

No	Code	Total Liabilities (In million)	Total Equity (In million)	Liabilities + Equity (In million)	Wd	We
1	ASII	13898301	10863041	24761342	56.13%	43.87%
2	AUTO	623945	1194707	1818652	34.31%	65.69%
3	GJTL	10921544	1326281	12247825	89.17%	10.83%
4	AQUA	247497	269724	517221	47.85%	52.15%
5	SMAR	3883276	-253294	3629982	106.98%	-6.98%
6	INDF	10552330	4093881	14646211	72.05%	27.95%
7	MYOR	469490	804378	1273868	36.86%	63.14%
8	MLBI	214707	268297	483004	44.45%	55.55%
9	STTP	205009	300499	505508	40.56%	59.44%
10	DAVO	303427	590647	894074	33.94%	66.06%
11	GGRM	6368018	10970871	17338889	36.73%	63.27%
12	HMSP	4197837	5768407	9966244	42.12%	57.88%
13	RMBA	1014340	1000762	2015102	50.34%	49.66%
14	KLBF	1424896	828958	2253854	63.22%	36.78%
15	TSPC	303361	1557613	1860974	16.30%	83.70%
16	KAEF	614144	754001	1368145	44.89%	55.11%
17	INCI	24156	144963	169119	14.28%	85.72%
18	DPNS	29186	103233	132419	22.04%	77.96%
19	INTP	5611608	4533458	10145066	55.31%	44.69%
20	SMCB	4990592	2657050	7647642	65.26%	34.74%
21	SMGR	3168286	3333774	6502060	48.73%	51.27%
22	BRPT	3744495	-430120	3314375	112.98%	-12.98%
23	AMFG	626771	858047	1484818	42.21%	57.79%
24	BRNA	113269	138224	251493	45.04%	54.96%
25	INDR	2581733	1948436	4530169	56.99%	43.01%
26	BATA	73833	158431	232264	31.79%	68.21%
27	KBLM	70040	136318	206358	33.94%	66.06%
28	LTLS	775171	399392	1174563	66.00%	34.00%
29	TURI	1009321	475730	1485051	67.97%	32.03%
30	HEXA	377700	206811	584511	64.62%	35.38%

Wd & We 2005

No	Code	Total Liabilities (In million)	Total Equity (In million)	Liabilities + Equity (In million)	Wd	We
1	ASII	19425440	15233543	34658983	56.05%	43.95%
2	AUTO	868114	1398514	2266628	38.30%	61.70%
3	GJTL	4656619	1684537	6341156	73.43%	26.57%
4	AQUA	308620	355338	663958	46.48%	53.52%
5	SMAR	4321273	-348598	3972675	108.77%	-8.77%
6	INDF	10727582	4189916	14917498	71.91%	28.09%
7	MYOR	398172	869242	1267414	31.42%	68.58%
8	MLBI	303532	249535	553067	54.88%	45.12%
9	STTP	152214	317963	470177	32.37%	67.63%
10	DAVO	888346	689605	1577951	56.30%	43.70%
11	GGRM	8394061	12183853	20577914	40.79%	59.21%
12	HMSP	6522408	4859430	11381838	57.31%	42.69%
13	RMBA	904084	1052739	1956823	46.20%	53.80%
14	KLBF	2284131	1598650	3882781	58.83%	41.17%
15	TSPC	379832	1686446	2066278	18.38%	81.62%
16	KAEF	358855	814584	1173439	30.58%	69.42%
17	INCI	26492	153418	179910	14.73%	85.27%
18	DPNS	30883	110051	140934	21.91%	78.09%
19	INTP	5115219	4655793	9771012	52.35%	47.65%
20	SMCB	5366846	2153557	7520403	71.36%	28.64%
21	SMGR	2960744	3642437	6603181	44.84%	55.16%
22	BRPT	3900577	-562259	3338318	116.84%	-16.84%
23	AMFG	532823	1031163	1563986	34.07%	65.93%
24	BRNA	245695	142607	388302	63.27%	36.73%
25	INDR	2743170	2194257	4937427	55.56%	44.44%
26	BATA	90025	170710	260735	34.53%	65.47%
27	KBLM	105817	127718	233535	45.31%	54.69%
28	LTLS	904164	450186	1354350	66.76%	33.24%
29	TURI	1409485	593307	2002792	70.38%	29.62%
30	HEXA	352999	283110	636109	55.49%	44.51%

**APPENDICES 7
WACC 2003**

No	Code	Kd*	Wd	(Kd*xWd)	Ke	We	(KexWe)	WACC
1	ASII	2.66%	72.65%	1.93%	21.92%	27.35%	6.00%	7.93%
2	AUTO	0.90%	38.80%	0.35%	17.61%	61.20%	10.78%	11.13%
3	GJTL	0.38%	96.61%	0.37%	50.00%	3.39%	1.70%	2.06%
4	AQUA	0.04%	58.41%	0.02%	10.05%	41.59%	4.18%	4.20%
5	SMAR	2.92%	109.37%	3.19%	7.61%	-9.37%	-0.71%	2.48%
6	INDF	6.33%	74.52%	4.72%	8.00%	25.48%	2.04%	6.76%
7	MYOR	7.37%	43.83%	3.23%	12.57%	56.17%	7.06%	10.29%
8	MLBI	0.00%	40.44%	0.00%	13.38%	59.56%	7.97%	7.97%
9	STTP	1.30%	42.75%	0.56%	13.33%	57.25%	7.63%	8.19%
10	DAVO	1.43%	37.03%	0.53%	3.66%	62.97%	2.30%	2.83%
11	GGRM	4.13%	37.16%	1.53%	7.03%	62.84%	4.42%	5.95%
12	HMSP	5.35%	45.95%	2.46%	6.99%	54.05%	3.78%	6.24%
13	RMBA	2.68%	47.15%	1.26%	-4.44%	52.85%	-2.35%	-1.08%
14	KLBF	3.39%	73.58%	2.49%	4.00%	26.42%	1.06%	3.55%
15	TSPC	0.63%	18.32%	0.12%	12.15%	81.68%	9.92%	10.04%
16	KAEF	2.39%	34.78%	0.83%	3.81%	65.22%	2.48%	3.32%
17	INCI	0.45%	15.49%	0.07%	15.67%	84.51%	13.24%	13.31%
18	DPNS	0.73%	11.78%	0.09%	-3.83%	88.22%	-3.38%	-3.29%
19	INTP	2.15%	66.70%	1.43%	8.56%	33.30%	2.85%	4.28%
20	SMCB	0.63%	67.48%	0.43%	5.68%	32.52%	1.85%	2.27%
21	SMGR	7.75%	53.36%	4.14%	8.00%	46.64%	3.73%	7.87%
22	BRPT	5.73%	81.90%	4.69%	32.59%	18.10%	5.90%	10.59%
23	AMFG	0.72%	51.69%	0.37%	19.04%	48.31%	9.20%	9.57%
24	BRNA	7.66%	40.66%	3.11%	7.44%	59.34%	4.41%	7.53%
25	INDR	1.37%	58.29%	0.80%	11.81%	41.71%	4.93%	5.72%
26	BATA	5.26%	29.00%	1.53%	19.60%	71.00%	13.92%	15.44%
27	KBLM	10.57%	18.51%	1.96%	-58.57%	81.49%	-47.73%	-45.77%
28	LTLS	10.78%	53.59%	5.78%	3.51%	46.41%	1.63%	7.41%
29	TURI	0.39%	62.13%	0.24%	19.33%	37.87%	7.32%	7.56%
30	HEXA	1.00%	72.18%	0.72%	27.35%	27.82%	7.61%	8.33%

WACC 2004

No	Code	Kd*	Wd	(Kd*xWd)	Ke	We	(KexWe)	WACC
1	ASII	2.52%	56.13%	1.41%	13.91%	43.87%	6.10%	7.52%
2	AUTO	1.23%	34.31%	0.42%	15.12%	65.69%	9.93%	10.35%
3	GJTL	0.29%	89.17%	0.26%	23.23%	10.83%	2.52%	2.77%
4	AQUA	0.07%	47.85%	0.03%	10.15%	52.15%	5.29%	5.33%
5	SMAR	3.12%	106.98%	3.34%	-2.35%	-6.98%	0.16%	3.50%
6	INDF	6.26%	72.05%	4.51%	5.13%	27.95%	1.43%	5.94%
7	MYOR	5.99%	36.86%	2.21%	9.25%	63.14%	5.84%	8.05%
8	MLBI	0.02%	44.45%	0.01%	9.75%	55.55%	5.42%	5.43%
9	STTP	2.45%	40.56%	0.99%	12.22%	59.44%	7.26%	8.26%
10	DAVO	1.97%	33.94%	0.67%	8.00%	66.06%	5.28%	5.95%
11	GGRM	3.62%	36.73%	1.33%	6.86%	63.27%	4.34%	5.67%
12	HMSP	5.95%	42.12%	2.51%	6.83%	57.88%	3.95%	6.46%
13	RMBA	1.69%	50.34%	0.85%	10.91%	49.66%	5.42%	6.27%
14	KLBF	4.12%	63.22%	2.60%	10.00%	36.78%	3.68%	6.28%
15	TSPC	0.52%	16.30%	0.08%	9.45%	83.70%	7.91%	7.99%
16	KAEF	0.30%	44.89%	0.13%	6.83%	55.11%	3.76%	3.90%
17	INCI	0.93%	14.28%	0.13%	14.77%	85.72%	12.66%	12.79%
18	DPNS	0.20%	22.04%	0.04%	5.10%	77.96%	3.98%	4.02%
19	INTP	2.31%	55.31%	1.28%	1.04%	44.69%	0.46%	1.74%
20	SMCB	0.76%	65.26%	0.50%	-12.17%	34.74%	-4.23%	-3.73%
21	SMGR	5.26%	48.73%	2.56%	4.64%	51.27%	2.38%	4.94%
22	BRPT	2.85%	112.98%	3.22%	-12.22%	-12.98%	1.59%	4.81%
23	AMFG	0.72%	42.21%	0.30%	22.14%	57.79%	12.79%	13.10%
24	BRNA	7.74%	45.04%	3.49%	15.73%	54.96%	8.65%	12.13%
25	INDR	1.34%	56.99%	0.76%	11.20%	43.01%	4.82%	5.58%
26	BATA	5.17%	31.79%	1.64%	19.40%	68.21%	13.23%	14.88%
27	KBLM	8.65%	33.94%	2.94%	-32.86%	66.06%	-21.71%	-18.77%
28	LTLS	8.11%	66.00%	5.35%	18.11%	34.00%	6.16%	11.51%
29	TURI	0.17%	67.97%	0.12%	16.15%	32.03%	5.17%	5.29%
30	HEXA	0.75%	64.62%	0.48%	3.54%	35.38%	1.25%	1.74%

WACC 2005

No	Code	Kd*	Wd	(Kd*xWd)	Ke	We	(KexWe)	WACC
1	ASII	1.52%	56.05%	0.85%	13.22%	43.95%	5.81%	6.66%
2	AUTO	1.89%	38.30%	0.72%	12.93%	61.70%	7.98%	8.70%
3	GJTL	2.63%	73.43%	1.93%	19.46%	26.57%	5.17%	7.10%
4	AQUA	0.06%	46.48%	0.03%	7.76%	53.52%	4.15%	4.18%
5	SMAR	2.04%	108.77%	2.22%	11.16%	-8.77%	-0.98%	1.24%
6	INDF	5.40%	71.91%	3.88%	1.43%	28.09%	0.40%	4.28%
7	MYOR	6.30%	31.42%	1.98%	7.32%	68.58%	5.02%	7.00%
8	MLBI	0.21%	54.88%	0.12%	8.26%	45.12%	3.73%	3.84%
9	STTP	1.48%	32.37%	0.48%	5.33%	67.63%	3.60%	4.08%
10	DAVO	0.56%	56.30%	0.32%	18.75%	43.70%	8.19%	8.51%
11	GGRM	4.34%	40.79%	1.77%	8.43%	59.21%	4.99%	6.76%
12	HMSP	3.22%	57.31%	1.85%	6.11%	42.69%	2.61%	4.45%
13	RMBA	2.67%	46.20%	1.23%	11.85%	53.80%	6.38%	7.61%
14	KLBF	2.85%	58.83%	1.68%	6.46%	41.17%	2.66%	4.34%
15	TSPC	0.79%	18.38%	0.15%	11.68%	81.62%	9.53%	9.68%
16	KAEF	1.74%	30.58%	0.53%	6.90%	69.42%	4.79%	5.32%
17	INCI	1.77%	14.73%	0.26%	17.53%	85.27%	14.95%	15.21%
18	DPNS	0.35%	21.91%	0.08%	2.87%	78.09%	2.24%	2.32%
19	INTP	3.61%	52.35%	1.89%	5.66%	47.65%	2.70%	4.59%
20	SMCB	1.09%	71.36%	0.78%	-9.26%	28.64%	-2.65%	-1.87%
21	SMGR	3.71%	44.84%	1.66%	9.69%	55.16%	5.35%	7.01%
22	BRPT	1.49%	116.84%	1.74%	47.64%	-16.84%	-8.02%	-6.28%
23	AMFG	1.02%	34.07%	0.35%	14.74%	65.93%	9.72%	10.07%
24	BRNA	6.82%	63.27%	4.32%	4.80%	36.73%	1.76%	6.08%
25	INDR	2.30%	55.56%	1.28%	6.60%	44.44%	2.93%	4.21%
26	BATA	4.86%	34.53%	1.68%	13.31%	65.47%	8.71%	10.39%
27	KBLM	7.69%	45.31%	3.48%	16.25%	54.69%	8.89%	12.37%
28	LTLS	6.30%	66.76%	4.21%	13.96%	33.24%	4.64%	8.85%
29	TURI	0.23%	70.38%	0.16%	14.78%	29.62%	4.38%	4.54%
30	HEXA	1.43%	55.49%	0.79%	12.08%	44.51%	5.38%	6.17%

APPENDICES 8
EVA 2003

No	Code	NOPAT	WACC	Beg Capital	EVA
		(In million)		(In million)	(In million)
1	ASII	5077639	7.93%	23762856	3193245
2	AUTO	214944	11.13%	1711004	24509
3	GJTL	937470	2.06%	12687636	676105
4	AQUA	63419	4.20%	530847	41123
5	SMAR	232795	2.48%	3570013	144258
6	INDF	1571714	6.76%	14375838	599907
7	MYOR	145662	10.29%	1323119	9513
8	MLBI	90226	7.97%	475037	52366
9	STTP	34916	8.19%	470451	-3614
10	DAVO	97988	2.83%	791797	75580
11	GGRM	2177417	5.95%	15452695	1257982
12	HMSP	1744504	6.24%	9622894	1144035
13	RMBA	13763	-1.08%	2071902	36140
14	KLBF	389004	3.55%	1854043	323185
15	TSPC	325551	10.04%	1742964	150557
16	KAEF	57810	3.32%	638545	36610
17	INCI	8172	13.31%	164060	-13664
18	DPNS	-1015	-3.29%	124564	3084
19	INTP	904258	4.28%	11437524	414732
20	SMCB	221137	2.27%	7713791	46034
21	SMGR	775531	7.87%	6820896	238727
22	BRPT	684239	10.59%	6778157	-33568
23	AMFG	171269	9.57%	1502438	27486
24	BRNA	18943	7.53%	240537	830
25	INDR	95930	5.72%	4837748	-180789
26	BATA	40508	15.44%	210081	8071
27	KBLM	-39385	-45.77%	223286	62813
28	LTLS	78207	7.41%	854692	14874
29	TURI	84956	7.56%	1111266	944
30	HEXA	49110	8.33%	638784	-4101

EVA 2004

No	Code	NOPAT	WACC	Beg. Capital	EVA
		(In million)		(In million)	(In million)
1	ASII	5906198	7.52%	24761342	4044145
2	AUTO	234155	10.35%	1818652	45925
3	GJTL	523072	2.77%	12247825	183807
4	AQUA	91825	5.33%	517221	64257
5	SMAR	65368	3.50%	3629982	-61681
6	INDF	1330774	5.94%	14646211	460789
7	MYOR	125293	8.05%	1273868	22746
8	MLBI	87369	5.43%	483004	61142
9	STTP	35761	8.26%	505508	-5994
10	DAVO	107476	5.95%	894074	54279
11	GGRM	2119417	5.67%	17338889	1136302
12	HMSP	2348608	6.46%	9966244	1704789
13	RMBA	105467	6.27%	2015102	-20880
14	KLBF	534534	6.28%	2253854	392992
15	TSPC	325344	7.99%	1860974	176652
16	KAEF	48094	3.90%	1368145	-5263
17	INCI	12150	12.79%	169119	-9481
18	DPNS	6548	4.02%	132419	1225
19	INTP	301511	1.74%	10145066	124987
20	SMCB	-479200	-3.73%	7647642	-193943
21	SMGR	747178	4.94%	6502060	425976
22	BRPT	9120	4.81%	3314375	-150302
23	AMFG	213241	13.10%	1484818	18729
24	BRNA	28123	12.13%	251493	-2383
25	INDR	92794	5.58%	4530169	-159989
26	BATA	40758	14.88%	232264	6197
27	KBLM	-16662	-18.77%	206358	22071
28	LTLS	141775	11.51%	1174563	6583
29	TURI	155163	5.29%	1485051	76604
30	HEXA	95485	1.74%	584511	85314

EVA 2005

No	Code	NOPAT	WACC	Beg. Capital	EVA
		(In million)		(In million)	(In million)
1	ASII	5879129	6.66%	34658983	3570841
2	AUTO	302414	8.70%	2266628	105217
3	GJTL	521936	7.10%	6341156	71714
4	AQUA	64611	4.18%	663958	36857
5	SMAR	430269	1.24%	3972675	381008
6	INDF	951835	4.28%	14917498	313366
7	MYOR	81560	7.00%	1267414	-7159
8	MLBI	87906	3.84%	553067	66668
9	STTP	13858	4.08%	470177	-5325
10	DAVO	97159	8.51%	1577951	-37125
11	GGRM	2410501	6.76%	20577914	1019434
12	HMSP	2683236	4.45%	11381838	2176744
13	RMBA	142701	7.61%	1956823	-6213
14	KLBF	746304	4.34%	3882781	577791
15	TSPC	301119	9.68%	2066278	101103
16	KAEF	61745	5.32%	1173439	-682
17	INCI	12258	15.21%	179910	-15106
18	DPNS	4630	2.32%	140934	1361
19	INTP	1003160	4.59%	9771012	554671
20	SMCB	-250378	-1.87%	7520403	-109746
21	SMGR	1179607	7.01%	6603081	716731
22	BRPT	770100	-6.28%	3338318	979746
23	AMFG	220327	10.07%	1563986	62834
24	BRNA	27259	6.08%	388302	3651
25	INDR	110644	4.21%	4937427	-97222
26	BATA	31342	10.39%	260735	4252
27	KBLM	25759	12.37%	233535	-3129
28	LTLS	133789	8.85%	1354350	13929
29	TURI	147439	4.54%	2002792	56512
30	HEXA	104983	6.17%	636109	65735

**APPENDICES 9
MVA 2003**

No	Code	Issued Share	Price of Share	Price of Share	Total Equity	MVA
				(In million)	(In million)	(In million)
1	ASII	4048355314	5000	0.005	6498561	13743216
2	AUTO	757305280	1550	0.00155	1047092	126731
3	GJTL	3168000000	550	0.00055	429553	1312847
4	AQUA	13162473	47800	0.0478	220765	408401
5	SMAR	297360000	3075	0.00308	-334627	1249009
6	INDF	9443269500	800	0.0008	3662698	3891918
7	MYOR	766584000	875	0.00088	743179	-72418
8	MLBI	21070000	32000	0.032	282941	391299
9	STTP	1310000000	180	0.00018	269316	-33516
10	DAVO	1240371132	410	0.00041	498631	9921
11	GGRM	1924088000	13600	0.0136	9709701	16457896
12	HMSP	4500000000	4475	0.00448	5200893	14936607
13	RMBA	6733125000	90	0.00009	1095089	-489108
14	KLBF	8121600000	1000	0.001	489918	7631682
15	TSPC	450000000	5900	0.0059	1423573	1231427
16	KAEF	5554000001	210	0.00021	677297	489043
17	INCI	168666667	300	0.0003	138643	-88043
18	DPNS	125945820	235	0.00024	109890	-80293
19	INTP	3681231699	2125	0.00213	3808395	4014222
20	SMCB	7662900000	405	0.00041	2508495	594980
21	SMGR	593152000	7850	0.00785	3181038	1475205
22	BRPT	2617459794	270	0.00027	1226949	-520235
23	AMFG	434000000	1975	0.00198	725817	131333
24	BRNA	69000000	1600	0.0016	142734	-32334
25	INDR	654351707	525	0.00053	2017659	-1674124
26	BATA	13000000	14100	0.0141	149150	34150
27	KBLM	1120000000	70	0.00007	181948	-103548
28	LTLS	780000000	285	0.00029	396699	-174399
29	TURI	1395000000	300	0.0003	420848	-2348
30	HEXA	168000000	925	0.00093	177738	-22338

MVA 2004

No	Code	Issued Share	Price of Share	Price of Share	Total Equity	MVA
				(in million)	(in million)	(in million)
1	ASII	4048355314	9600	0.0096	10863041	28001170
2	AUTO	769256780	1925	0.00193	1194707	286112
3	GJTL	3168000000	650	0.00065	1326281	732919
4	AQUA	13162473	47800	0.0478	269724	359442
5	SMAR	297360000	3100	0.0031	-253294	1175110
6	INDF	9444189000	800	0.0008	4093881	3461470
7	MYOR	766584000	1200	0.0012	804378	115523
8	MLBI	21070000	42500	0.0425	268297	627178
9	STTP	1310000000	180	0.00018	300499	-64699
10	DAVO	6201855660	200	0.0002	590647	649724
11	GGRM	1924088000	13550	0.01355	10970871	15100521
12	HMSP	4500000000	6650	0.00665	5768407	24156593
13	RMBA	6733125000	110	0.00011	1000762	-260118
14	KLBF	8121600000	550	0.00055	828958	3637922
15	TSPC	4500000000	7600	0.0076	1557613	1862387
16	KAEF	5554000001	205	0.00021	754001	384569
17	INCI	168666667	440	0.00044	144963	-70750
18	DPNS	1387500000	1000	0.001	103233	1284267
19	INTP	3681231699	3075	0.00308	4533458	6786329
20	SMCB	7662900000	575	0.00058	2657050	1749118
21	SMGR	593152000	18500	0.0185	3333774	7639538
22	BRPT	2617459794	450	0.00045	-430120	1607977
23	AMFG	434000000	2150	0.00215	858047	75053
24	BRNA	69000000	1475	0.00148	138224	-36449
25	INDR	654351707	625	0.00063	1948436	-1539466
26	BATA	13000000	14000	0.014	158431	23569
27	KBLM	1120000000	70	0.00007	136318	-57918
28	LTLS	780000000	370	0.00037	399392	-110792
29	TURI	1395000000	675	0.00068	475730	465895
30	HEXA	168000000	3075	0.00308	206811	309789

MVA 2005

No	Code	Issued Share	Price of Share	Price of Share	Total Equity	MVA
				(in million)	(in million)	(in million)
1	ASII	4048355314	10200	0.0102	15233543	26059681
2	AUTO	771355280	2800	0.0028	1398514	761281
3	GJTL	3168000000	560	0.00056	1684537	89543
4	AQUA	13162473	63000	0.063	355338	473898
5	SMAR	2872193366	950	0.00095	-348598	3077182
6	INDF	9444189000	910	0.00091	4189916	4404296
7	MYOR	766584000	820	0.00082	869242	-240643
8	MLBI	21070000	50000	0.05	249535	803965
9	STTP	1310000000	150	0.00015	317963	-121463
10	DAVO	6201855660	80	0.00008	689605	-193457
11	GGRM	1924088000	11650	0.01165	12183853	10231772
12	HMSP	4500000000	8900	0.0089	4859430	35190570
13	RMBA	6733125000	135	0.00014	1052739	-143767
14	KLBF	10156014422	990	0.00099	1598650	8455804
15	TSPC	4500000000	5650	0.00565	1686446	856054
16	KAEF	5554000001	145	0.00015	814584	-9254
17	INCI	181035556	365	0.00037	153418	-87340
18	DPNS	154146702	1010	0.00101	110051	45637
19	INTP	3681231699	3550	0.00355	4655793	8412580
20	SMCB	7662900000	475	0.00048	2153557	1486321
21	SMGR	593152000	17800	0.0178	3642437	6915669
22	BRPT	2617459794	550	0.00055	-562259	2001862
23	AMFG	4340000000	3325	0.00333	1031163	411887
24	BRNA	690000000	1000	0.001	142607	-73607
25	INDR	654351707	470	0.00047	2194257	-1886712
26	BATA	130000000	14500	0.0145	170710	17790
27	KBLM	1120000000	80	0.00008	127718	-38118
28	LTLS	7800000000	480	0.00048	450186	-75786
29	TURI	1395000000	690	0.00069	593307	369243
30	HEXA	8400000000	960	0.00096	283110	523290

APPENDICES 10
Rank of EVA from year 2003 -2005

No	Code	Companies	Year	Rank
1	ASII	PT Astra International Tbk.	2003	3
2	AUTO	PT Astra Otoparts Tbk.	2003	51
3	GJTL	PT Gajah Tunggal Tbk.	2003	12
4	AQUA	PT Aqua Golden Misisipi Tbk.	2003	46
5	SMAR	PT Sinar Mas Agro Tbk.	2003	27
6	INDF	PT Indofood Sukses Makmur Tbk.	2003	13
7	MYOR	PT Mayora Tbk.	2003	57
8	MLBI	PT Multi Bintang Indonesia Tbk.	2003	43
9	STTP	PT Siantar TOP Tbk.	2003	71
10	DAVO	PT Davo Mas Abadi Tbk.	2003	33
11	GGRM	PT Gudang Garam Tbk.	2003	6
12	HMSP	PT Hanjaya Mandala Sampoerna T.	2003	7
13	RMBA	PT Bentoel International Inves Tbk.	2003	49
14	KLBF	PT Kalbe Farma Tbk.	2003	21
15	TSPC	PT Tempo Scan Pacific Tbk.	2003	26
16	KAEF	PT Kimia Farma Tbk.	2003	48
17	INCI	PT Intan Wijaya.	2003	79
18	DPNS	PT Duta Pertiwi Nusantara.	2003	63
19	INTP	PT Indocement Tunggal Prakarsa.	2003	18
20	SMCB	PT Semen Cibinong Tbk.	2003	44
21	SMGR	PT Semen Gresik (Persero) Tbk.	2003	23
22	BRPT	PT Barito Pacific Timber Tbk.	2003	82
23	AMFG	PT Asahimas Flat Glass Tbk.	2003	50
24	BRNA	PT Berlina Tbk.	2003	67
25	INDR	PT Indorama Syntetics Tbk.	2003	89
26	BATA	PT Sepatu Bata Tbk.	2003	58
27	KBLM	PT Kabelindo Murni Tbk.	2003	39
28	LTLS	PT Lautan Luas Tbk	2003	55
29	TURI	PT Tunas Ridean Tbk	2003	66
30	HEXA	PT Hexindo Tbk	2003	72

Rank of EVA from year 2003 -2005

No	Code	Companies	Year	Rank
31	ASII	PT Astra International Tbk.	2004	1
32	AUTO	PT Astra Otoparts Tbk.	2004	45
33	GJTL	PT Gajah Tunggal Tbk.	2004	24
34	AQUA	PT Aqua Golden Misisipi Tbk.	2004	37
35	SMAR	PT Sinar Mas Agro Tbk.	2004	84
36	INDF	PT Indofood Sukses Makmur Tbk.	2004	16
37	MYOR	PT Mayora Tbk.	2004	52
38	MLBI	PT Multi Bintang Indonesia Tbk.	2004	40
39	STTP	PT Siantar TOP Tbk.	2004	75
40	DAVO	PT Davo Mas Abadi Tbk.	2004	42
41	GGRM	PT Gudang Garam Tbk.	2004	8
42	HMSP	PT Hanjaya Mandala Sampoerna T	2004	5
43	RMBA	PT Bentoel International Inves Tbk.	2004	81
44	KLBF	PT Kalbe Farma Tbk.	2004	19
45	TSPC	PT Tempo Scan Pacific Tbk.	2004	25
46	KAEF	PT Kimia Farma Tbk.	2004	73
47	INCI	PT Intan Wijaya.	2004	78
48	DPNS	PT Duta Pertiwi Nusantara.	2004	65
49	INTP	PT Indocement Tunggal Prakarsa.	2004	28
50	SMCB	PT Semen Cibinong Tbk.	2004	90
51	SMGR	PT Semen Gresik (Persero) Tbk.	2004	17
52	BRPT	PT Barito Pacific Timber Tbk.	2004	87
53	AMFG	PT Asahimas Flat Glass Tbk.	2004	54
54	BRNA	PT Berlina Tbk.	2004	69
55	INDR	PT Indorama Syntetics Tbk.	2004	88
56	BATA	PT Sepatu Bata Tbk.	2004	60
57	KBLM	PT Kabelindo Murni Tbk.	2004	53
58	LTLS	PT Lautan Luas Tbk	2004	59
59	TURI	PT Tunas Ridean Tbk	2004	32
60	HEXA	PT Hexindo Tbk	2004	31

Rank of EVA from year 2003 -2005

No	Code	Companies	Year	Rank
61	ASII	PT Astra International Tbk.	2005	2
62	AUTO	PT Astra Otoparts Tbk.	2005	29
63	GJTL	PT Gajah Tunggal Tbk.	2005	34
64	AQUA	PT Aqua Golden Misisipi Tbk.	2005	47
65	SMAR	PT Sinar Mas Agro Tbk.	2005	20
66	INDF	PT Indofood Sukses Makmur Tbk.	2005	22
67	MYOR	PT Mayora Tbk.	2005	77
68	MLBI	PT Multi Bintang Indonesia Tbk.	2005	35
69	STTP	PT Siantar TOP Tbk.	2005	74
70	DAVO	PT Davo Mas Abadi Tbk.	2005	83
71	GGRM	PT Gudang Garam Tbk.	2005	9
72	HMSP	PT Hanjaya Mandala Sampoerna T	2005	4
73	RMBA	PT Bentoel International Inves Tbk.	2005	76
74	KLBF	PT Kalbe Farma Tbk.	2005	14
75	TSPC	PT Tempo Scan Pacific Tbk.	2005	30
76	KAEF	PT Kimia Farma Tbk.	2005	68
77	INCI	PT Intan Wijaya.	2005	80
78	DPNS	PT Duta Pertiwi Nusantara.	2005	64
79	INTP	PT Indocement Tunggal Prakarsa.	2005	15
80	SMCB	PT Semen Cibinong Tbk.	2005	86
81	SMGR	PT Semen Gresik (Persero) Tbk.	2005	11
82	BRPT	PT Barito Pacific Timber Tbk.	2005	10
83	AMFG	PT Asahimas Flat Glass Tbk.	2005	38
84	BRNA	PT Berlina Tbk.	2005	62
85	INDR	PT Indorama Syntetics Tbk.	2005	85
86	BATA	PT Sepatu Bata Tbk.	2005	61
87	KBLM	PT Kabelindo Murni Tbk.	2005	70
88	LTLS	PT Lautan Luas Tbk	2005	56
89	TURI	PT Tunas Ridean Tbk	2005	41
90	HEXA	PT Hexindo Tbk	2005	36

APPENDICES 11
Rank of MVA from year 2003 -2005

No	Code	Companies	Year	Rank
1	ASII	PT Astra International Tbk.	2003	8
2	AUTO	PT Astra Otoparts Tbk.	2003	53
3	GJTL	PT Gajah Tunggal Tbk.	2003	28
4	AQUA	PT Aqua Golden Misisipi	2003	45
5	SMAR	PT Sinar Mas Agro/SMART	2003	30
6	INDF	PT Indofood Sukses Makmur Tbk.	2003	18
7	MYOR	PT Mayora Indah	2003	72
8	MLBI	PT Multi Bintang Indonesia	2003	46
9	STTP	PT Siantar TOP	2003	66
10	DAVO	PT Davomas Abadi	2003	61
11	GGRM	PT Gudang Garam Tbk.	2003	5
12	HMSP	PT Hanjaya Mandala Sampoerna T	2003	7
13	RMBA	PT Bentoel International Inves	2003	86
14	KLBF	PT Kalbe Farma Tbk.	2003	13
15	TSPC	PT Tempo Scan Pacific Tbk.	2003	31
16	KAEF	PT Kimia Farma Tbk	2003	41
17	INCI	PT Intan Wijaya International	2003	77
18	DPNS	PT Duta Pertiwi Nusantara	2003	75
19	INTP	PT Indocement Tunggal Prakarsa	2003	17
20	SMCB	PT Semen Cibinong Tbk./Holcim	2003	39
21	SMGR	PT Semen Gresik (Persero) Tbk.	2003	27
22	BRPT	PT Barito Pacific Timber Tbk.	2003	87
23	AMFG	PT Asahimas Flat Glass	2003	52
24	BRNA	PT Berlina Tbk	2003	65
25	INDR	PT Indo-Rama Syntetics Tbk	2003	89
26	BATA	PT Sepatu Bata	2003	58
27	KBLM	PT Kabelindo Murni	2003	78
28	LTLS	PT Lautan Luas	2003	82
29	TURI	PT Tunas Ridean	2003	62
30	HEXA	PT Hexindo Adiperkasa	2003	64

Rank of MVA from year 2003 -2005

No	Code	Companies	Year	Rank
31	ASII	PT Astra Internationals Tbk.	2004	2
32	AUTO	PT Astra Otoparts Tbk.	2004	51
33	GJTL	PT Gajah Tunggal Tbk.	2004	36
34	AQUA	PT Aqua Golden Misisipi	2004	49
35	SMAR	PT Sinar Mas Agro/SMART	2004	32
36	INDF	PT Indofood Sukses Makmur Tbk.	2004	20
37	MYOR	PT Mayora Indah	2004	54
38	MLBI	PT Multi Bintang Indonesia	2004	38
39	STTP	PT Siantar TOP	2004	70
40	DAVO	PT Davomas Abadi	2004	37
41	GGRM	PT Gudang Garam Tbk.	2004	6
42	HMSP	PT Hanjaya Mandala Sampoerna T	2004	4
43	RMBA	PT Bentoel International Inves	2004	85
44	KLBF	PT Kalbe Farma Tbk.	2004	19
45	TSPC	PT Tempo Scan Pacific Tbk.	2004	23
46	KAEF	PT Kimia Farma Tbk	2004	47
47	INCI	PT Intan Wijaya International	2004	71
48	DPNS	PT Duta Pertiwi Nusantara	2004	29
49	INTP	PT Indocement Tunggal Prakarsa	2004	15
50	SMCB	PT Semen Cibinong Tbk./Holcim	2004	24
51	SMGR	PT Semen Gresik (Persero) Tbk.	2004	12
52	BRPT	PT Barito Pacific Timber Tbk.	2004	25
53	AMFG	PT Asahimas Flat Glass	2004	56
54	BRNA	PT Berlina Tbk	2004	67
55	INDR	PT Indo-Rama Syntetics Tbk	2004	88
56	BATA	PT Sepatu Bata	2004	59
57	KBLM	PT Kabelindo Murni	2004	69
58	LTLS	PT Lautan Luas	2004	79
59	TURI	PT Tunas Ridean	2004	43
60	HEXA	PT Hexindo Adiperkasa	2004	50

Rank of MVA from year 2003 -2005

No	Code	Companies	Year	Rank
61	ASII	PT Astra International Tbk.	2005	3
62	AUTO	PT Astra Otoparts Tbk.	2005	35
63	GJTL	PT Gajah Tunggal Tbk.	2005	55
64	AQUA	PT Aqua Golden Misisipi	2005	42
65	SMAR	PT Sinar Mas Agro/SMART	2005	21
66	INDF	PT Indofood Sukses Makmur Tbk.	2005	16
67	MYOR	PT Mayora Indah	2005	84
68	MLBI	PT Multi Bintang Indonesia	2005	34
69	STTP	PT Siantar TOP	2005	80
70	DAVO	PT Davomas Abadi	2005	83
71	GGRM	PT Gudang Garam Tbk.	2005	9
72	HMSP	PT Hanjaya Mandala Sampoerna T	2005	1
73	RMBA	PT Bentoel International Inves	2005	81
74	KLBF	PT Kalbe Farma Tbk.	2005	10
75	TSPC	PT Tempo Scan Pacific Tbk.	2005	33
76	KAEF	PT Kimia Farma Tbk	2005	63
77	INCI	PT Intan Wijaya International	2005	76
78	DPNS	PT Duta Pertiwi Nusantara	2005	57
79	INTP	PT Indocement Tunggal Prakarsa	2005	11
80	SMCB	PT Semen Cibinong Tbk./Holcim	2005	26
81	SMGR	PT Semen Gresik (Persero) Tbk.	2005	14
82	BRPT	PT Barito Pacific Timber Tbk.	2005	22
83	AMFG	PT Asahimas Flat Glass	2005	44
84	BRNA	PT Berlina Tbk	2005	73
85	INDR	PT Indo-Rama Syntetics Tbk	2005	90
86	BATA	PT Sepatu Bata	2005	60
87	KBLM	PT Kabelindo Murni	2005	68
88	LTLS	PT Lautan Luas	2005	74
89	TURI	PT Tunas Ridean	2005	48
90	HEXA	PT Hexindo Adiperkasa	2005	40

APPENDICES 12
Rank process both variable MVA and EVA during 2003-2005

No	Code	Year	MVA	Rank	EVA	Rank
			(In million)		(In million)	
1	ASII	2003	13743216	8	3193245	3
2	AUTO	2003	126731	53	24509	51
3	GJTL	2003	1312847	28	676105	12
4	AQUA	2003	408401	45	41123	46
5	SMAR	2003	1249009	30	144258	27
6	INDF	2003	3891918	18	599907	13
7	MYOR	2003	-72418	72	9513	57
8	MLBI	2003	391299	46	52366	43
9	STTP	2003	-33516	66	-3614	71
10	DAVO	2003	9921	61	75580	33
11	GGRM	2003	16457896	5	1257982	6
12	HMSP	2003	14936607	7	1144035	7
13	RMBA	2003	-489108	86	36140	49
14	KLBF	2003	7631682	13	323185	21
15	TSPC	2003	1231427	31	150557	26
16	KAEF	2003	489043	41	36610	48
17	INCI	2003	-88043	77	-13664	79
18	DPNS	2003	-80293	75	3084	63
19	INTP	2003	4014222	17	414732	18
20	SMCB	2003	594980	39	46034	44
21	SMGR	2003	1475205	27	238727	23
22	BRPT	2003	-520235	87	-33568	82
23	AMFG	2003	131333	52	27486	50
24	BRNA	2003	-32334	65	830	67
25	INDR	2003	-1674124	89	-180789	89
26	BATA	2003	34150	58	8071	58
27	KBLM	2003	-103548	78	62813	39
28	LTLS	2003	-174399	82	14874	55
29	TURI	2003	-2348	62	944	66
30	HEXA	2003	-22338	64	-4101	72

Rank process both variable MVA and EVA during 2003-2005

No	Code	Year	MVA	Rank	EVA	Rank
			(In million)		(In million)	
31	ASII	2004	28001170	2	4044145	1
32	AUTO	2004	286112	51	45925	45
33	GJTL	2004	732919	36	183807	24
34	AQUA	2004	359442	49	64257	37
35	SMAR	2004	1175110	32	-61681	84
36	INDF	2004	3461470	20	460789	16
37	MYOR	2004	115523	54	22746	52
38	MLBI	2004	627178	38	61142	40
39	STTP	2004	-64699	70	-5994	75
40	DAVO	2004	649724	37	54279	42
41	GGRM	2004	15100521	6	1136302	8
42	HMSP	2004	24156593	4	1704789	5
43	RMBA	2004	-260118	85	-20880	81
44	KLBF	2004	3637922	19	392992	19
45	TSPC	2004	1862387	23	176652	25
46	KAEF	2004	384569	47	-5263	73
47	INCI	2004	-70750	71	-9481	78
48	DPNS	2004	1284267	29	1225	65
49	INTP	2004	6786329	15	124987	28
50	SMCB	2004	1749118	24	-193943	90
51	SMGR	2004	7639538	12	425976	17
52	BRPT	2004	1607977	25	-150302	87
53	AMFG	2004	75053	56	18729	54
54	BRNA	2004	-36449	67	-2383	69
55	INDR	2004	-1539466	88	-159989	88
56	BATA	2004	23569	59	6197	60
57	KBLM	2004	-57918	69	22071	53
58	LTLS	2004	-110792	79	6583	59
59	TURI	2004	465895	43	76604	32
60	HEXA	2004	309789	50	85314	31

Rank process both variable MVA and EVA during 2003-2005

No	Code	Year	MVA	Rank	EVA	Rank
			(In million)		(In million)	
61	ASII	2005	26059681	3	3570841	2
62	AUTO	2005	761281	35	105217	29
63	GJTL	2005	89543	55	71714	34
64	AQUA	2005	473898	42	36857	47
65	SMAR	2005	3077182	21	381008	20
66	INDF	2005	4404296	16	313366	22
67	MYOR	2005	-240643	84	-7159	77
68	MLBI	2005	803965	34	66668	35
69	STTP	2005	-121463	80	-5325	74
70	DAVO	2005	-193457	83	-37125	83
71	GGRM	2005	10231772	9	1019434	9
72	HMSP	2005	35190570	1	2176744	4
73	RMBA	2005	-143767	81	-6213	76
74	KLBF	2005	8455804	10	577791	14
75	TSPC	2005	856054	33	101103	30
76	KAEF	2005	-9254	63	-682	68
77	INCI	2005	-87340	76	-15106	80
78	DPNS	2005	45637	57	1361	64
79	INTP	2005	8412580	11	554671	15
80	SMCB	2005	1486321	26	-109746	86
81	SMGR	2005	6915669	14	716731	11
82	BRPT	2005	2001862	22	979746	10
83	AMFG	2005	411887	44	62834	38
84	BRNA	2005	-73607	73	3651	62
85	INDR	2005	-1886712	90	-97222	85
86	BATA	2005	17790	60	4252	61
87	KBLM	2005	-38118	68	-3129	70
88	LTLS	2005	-75786	74	13929	56
89	TURI	2005	369243	48	56512	41
90	HEXA	2005	523290	40	65735	36

APPENDICES 13
Subtraction between Rank of MVA and Rank of EVA

No	Code	Year	Rank of MVA	Rank of EVA	d1	d1 ²
1	ASII	2003	8	3	5	25
2	AUTO	2003	53	51	2	4
3	GJTL	2003	28	12	16	256
4	AQUA	2003	45	46	-1	1
5	SMAR	2003	30	27	3	9
6	INDF	2003	18	13	5	25
7	MYOR	2003	72	57	15	225
8	MLBI	2003	46	43	3	9
9	STTP	2003	66	71	-5	25
10	DAVO	2003	61	33	28	784
11	GGRM	2003	5	6	-1	1
12	HMSP	2003	7	7	0	0
13	RMBA	2003	86	49	37	1369
14	KLBF	2003	13	21	-8	64
15	TSPC	2003	31	26	5	25
16	KAEF	2003	41	48	-7	49
17	INCI	2003	77	79	-2	4
18	DPNS	2003	75	63	12	144
19	INTP	2003	17	18	-1	1
20	SMCB	2003	39	44	-5	25
21	SMGR	2003	27	23	4	16
22	BRPT	2003	87	82	5	25
23	AMFG	2003	52	50	2	4
24	BRNA	2003	65	67	-2	4
25	INDR	2003	89	89	0	0
26	BATA	2003	58	58	0	0
27	KBLM	2003	78	39	39	1521
28	LTLS	2003	82	55	27	729
29	TURI	2003	62	66	-4	16
30	HEXA	2003	64	72	-8	64

Subtraction between Rank of MVA and Rank of EVA

No	Code	Year	Rank of MVA	Rank of EVA	d1	d1 ²
31	ASII	2004	2	1	1	1
32	AUTO	2004	51	45	6	36
33	GJTL	2004	36	24	12	144
34	AQUA	2004	49	37	12	144
35	SMAR	2004	32	84	-52	2704
36	INDF	2004	20	16	4	16
37	MYOR	2004	54	52	2	4
38	MLBI	2004	38	40	-2	4
39	STTP	2004	70	75	-5	25
40	DAVO	2004	37	42	-5	25
41	GGRM	2004	6	8	-2	4
42	HMSP	2004	4	5	-1	1
43	RMBA	2004	85	81	4	16
44	KLBF	2004	19	19	0	0
45	TSPC	2004	23	25	-2	4
46	KAEF	2004	47	73	-26	676
47	INCI	2004	71	78	-7	49
48	DPNS	2004	29	65	-36	1296
49	INTP	2004	15	28	-13	169
50	SMCB	2004	24	90	-66	4356
51	SMGR	2004	12	17	-5	25
52	BRPT	2004	25	87	-62	3844
53	AMFG	2004	56	54	2	4
54	BRNA	2004	67	69	-2	4
55	INDR	2004	88	88	0	0
56	BATA	2004	59	60	-1	1
57	KBLM	2004	69	53	16	256
58	LTLS	2004	79	59	20	400
59	TURI	2004	43	32	11	121
60	HEXA	2004	50	31	19	361

Subtraction between Rank of MVA and Rank of EVA

No	Code	Year	Rank of MVA	Rank of EVA	d1	d1 ²
61	ASII	2005	3	2	1	1
62	AUTO	2005	35	29	6	36
63	GJTL	2005	55	34	21	441
64	AQUA	2005	42	47	-5	25
65	SMAR	2005	21	20	1	1
66	INDF	2005	16	22	-6	36
67	MYOR	2005	84	77	7	49
68	MLBI	2005	34	35	-1	1
69	STTP	2005	80	74	6	36
70	DAVO	2005	83	83	0	0
71	GGRM	2005	9	9	0	0
72	HMSP	2005	1	4	-3	9
73	RMBA	2005	81	76	5	25
74	KLBF	2005	10	14	-4	16
75	TSPC	2005	33	30	3	9
76	KAEF	2005	63	68	-5	25
77	INCI	2005	76	80	-4	16
78	DPNS	2005	57	64	-7	49
79	INTP	2005	11	15	-4	16
80	SMCB	2005	26	86	-60	3600
81	SMGR	2005	14	11	3	9
82	BRPT	2005	22	10	12	144
83	AMFG	2005	44	38	6	36
84	BRNA	2005	73	62	11	121
85	INDR	2005	90	85	5	25
86	BATA	2005	60	61	-1	1
87	KBLM	2005	68	70	-2	4
88	LTLS	2005	74	56	18	324
89	TURI	2005	48	41	7	49
90	HEXA	2005	40	36	4	16
					Σ	25234

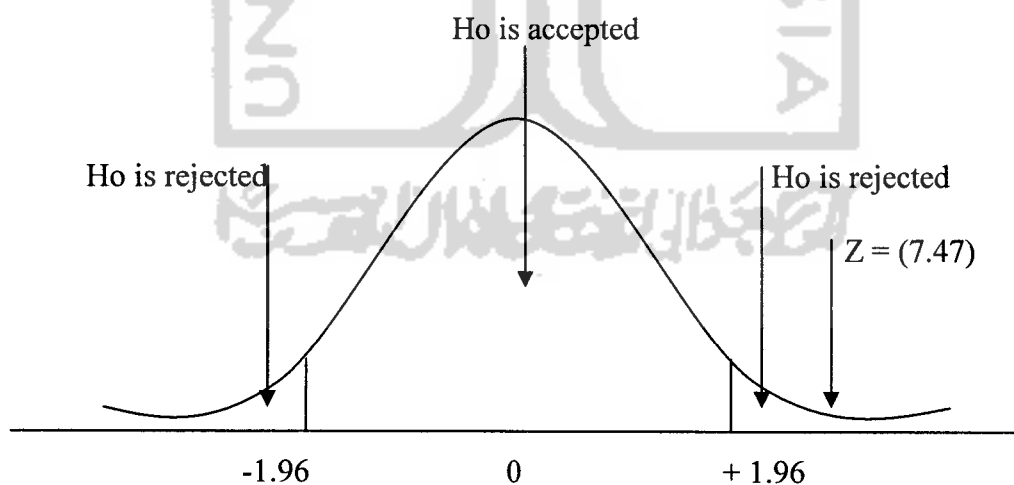
APPENDICES 14 RANK SPEARMAN ANALYSIS

Correlations

			EVA	MVA
Spearman's rho	EVA	Correlation Coefficient	1.000	.792(**)
		Sig. (2-tailed)	.	.000
		N	90	90
	MVA	Correlation Coefficient	.792(**)	1.000
		Sig. (2-tailed)	.000	.
		N	90	90

** Correlation is significant at the 0.01 level (2-tailed).

APPENDICES 15 ACCEPTANCE AND REJECTION AREA OF H_0



APPENDICES 16
Fluctuation of EVA and MVA

