FACTORS AFFECTING PRICE EARNINGS RATIO AND MARKET VALUE OF INDONESIAN FIRMS: An Empirical Examination of Firms Listed in Jakarta Stock Exchange for the period of 1999-2003

A THESIS

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



By

DELVI ERI SANDI

Student Number: 01312462

DEPARTMENT OF ACCOUNTING
INTERNATIONAL PROGRAM
FACULTY OF ECONOMICS
ISLAMIC UNIVERSITY OF INDONESIA
YOGYAKARTA
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A BACHELOR DEGREE THESIS

By

DELVI ERI SANDI
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Defended before the Board of Examiners
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STATEMENT OF FREE PLAGIARISM

Herein I declare the originality of this thesis; there is no other work which has never presented to obtain any university degree, and in my concern there is neither one else's opinion nor published written work, except acknowledgement quotation relevant to the topic of this thesis which have been stated or listed on the thesis bibliography.

If in the future this statement is not proven as it supposed to be, I am willing to accept any sanction complying to the determinated regulation for its consequence.

Jogjakarta, February 11, 2005

Delvi Eri Sandi

بسم الله الرحمن الرحيم

I Never Realized the Influence of these Statements on Me was So Amazing! I Hope I can share on My experiences, My Views, and My Feelings through these Statements for Every People that Never Realized such Small Things Like These...

"Don't make your assignments or works as an obligation, but make it as a chance to enjoy the beautiful of science, the satisfaction, we get when we are finished and the benefits that will receive by other people or society if your struggle succeed."

—Albert Einstein—

"A truly good man never says "this is my Father" but he always says "this is me!"

—Ali Bin Abi Thalib—

"Don't you ever regret a failure, but take a lesson and face it, therefore you can face the future brightly. Failed? Try Again!"

—Delvi Eri Sandi—

I dedicate this thesis to my families— Mom (Silvana Eliamor), Dad (M.Parhimpunan Lubis), Bro Timor and Bro Nando and for my future.

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Jogjakarta, February 17th, 2005



Delvi Eri Sandi

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ABSTRACT

Sandi, Delvi Eri (2005). Factors Affecting Price Earnings Ratio and Market Value of Indonesian Firms: An Empirical Examination of Firms Listed in Jakarta Stock Exchange for the Period of 1999-2003. Jogjakarta. Faculty of Economics. Islamic University of Indonesia.

This empirical study has a purpose to show how earnings growth, dividend growth, risk, dividend payout ratio as the fundamental factors of a company and ownership structure that is held by corporations, ownership structure that is held by individual and ownership structure that is held by foreign investor as additional factors, affect the amount of price earnings ratio and market values of Indonesian firms that are listed in Jakarta Stock Exchange for the period of 1999-2003. This study also investigates whether the price earnings ratio and market value can become a predictor of future earnings that will reflect the company's performance as a result to decide the investment choice by the investor.

The study uses linear regression model of a price earning ratio and market value as the proxy of dependent variable. The model, were used to explain the effect of earnings growth, dividend growth, risk, dividend payout ratio, ownership structure held by corporations, individual and foreign investor on both price earnings ratio and market value. The study confirms that company fundamental factors still become the best way to predict the amount of price earnings ratio. And for market value, ownership structure held by foreign investor is the significant factor. This result leads to a conclusion that price earnings ratio can become a predictor of the future earnings that will become a beneficial tool for the investors to choose their best investment.

Key Words: Price Earnings Ratio, Market Value, Earnings Growth, Dividend Growth, Risk, Dividend Payout Ratio, Ownership Structure.

ABSTRAK

Sandi, Delvi Eri (2005). Faktor-faktor yang Mempengaruhi Rasio Harga Laba dan Nilai Pasar pada Perusahaan-perusahaan di Indonesia: Pengujian Empiris pada Perusahaan yang *Listed* di Bursa Efek Jakarta. Jogjakarta. Fakultas Ekonomi. Universitas Islam Indonesia.

Studi empiris ini bertujuan untuk menunjukkan bagaimana faktor-faktor fundamental dari perusahaan yaitu pertumbuhan laba, pertumbuhan dividen, risiko, rasio pembayaran dividen serta faktor-faktor tambahan seperti struktur kepemilikan yang dimiliki oleh badan usaha, struktur kepemilikan yang dimiliki oleh perseorangan dan struktur kepemilikan yang dimiliki oleh investor asing mempengaruhi nilai dari rasio harga laba dan nilai pasar dari perusahaan-perusahaan yang *Listed* di Bursa Efek Jakarta, dengan periode pengamatan 1999-2003. Studi ini juga menyelidiki apakah rasio harga laba dan nilai pasar dapat menjadi prediktor dari laba yang akan datang, yang nantinya akan merefleksikan kinerja perusahaan, dan dapat digunakan sebagai bahan acuan bagi investor untuk mengambil keputusan dalam investasi.

Studi dilakukan memakai model regresi linier dengan rasio harga laba dan nilai pasar sebagai proksi dari variabelnya. Model digunakan untuk menerangkan pengaruh dari pertumbuhan laba, pertumbuhan dividen, risiko, rasio pembayaran dividen, struktur kepemilikan yang dimiliki oleh badan usaha, struktur kepemilikan yang dimiliki oleh perseorangan dan struktur kepemilikan yang dimiliki oleh investor asing terhadap rasio harga laba dan nilai pasar. Studi menegaskan bahwa faktor-faktor fundamental perusahaan, masih merupakan faktor terbaik untuk memprediksi nilai dari rasio harga laba. Sedangkan untuk memprediksi nilai pasar, dalam hal ini struktur kepemilikan yang dimiliki oleh investor asing adalah faktor yang sangat menentukan. Hasil ini mengarah kepada sebuah kesimpulan yaitu rasio harga laba dapat menjadi prediktor laba yang akan datang. Sehingga rasio ini dapat menjadi alat yang bermanfaat bagi para investor untuk memilih investasi terbaik mereka.

Kata kunci: Rasio Harga Laba, Nilai Pasar, Pertumbuhan Laba, Pertumbuhan Dividen, Risiko, Rasio Pembayaran Dividen, Struktur Kepemilikan.

CHAPTER I

INTRODUCTION

1.1. Background of The Study

The relationship between price earnings ratios and market values in determining the future return that are received by the investors have been explored, analyzed and discussed by many researchers as well as practitioners since many decades ago. The research in this area has been interesting since until nowadays, the common agreement about the ability of price earnings ratios indicated the high or low return has not been reached. Yet according to Asri Sw (2002), some analysts believe that a high price earnings ratio in the past is usually followed by slow growth in stock prices. This is one of the reasons why many investors pay a great attention to the high P/E ratios in the U.S. stock market in the mid late of the nineties. However, according to Shen (2000), the other groups of analysts disagrees and argues that history is no longer a true guide because the fundamental changes in the economy have made the stocks more attractive for investors. In other words, they justify a high P/E ratio.

Price earning ratio is also one of numerous important aspects to be considered and it is used by analysts, investor, and traders in stock market for analyzing the past performance, predicting the future prospect of securities in the market and measuring relative price from one company's stock. Price earnings ratio shows the ratio of the stock price to earnings (Jogiyanto, 2000). Price earnings ratio also reflect the expected stock value for future periods, therefore companies with the performance

and the beneficial work prospect will have a high price earnings ratios. Conversely, companies that did not have performance and beneficial work will have a low price earnings ratio.

Constand, Freitas and Sullivan (1991) provide further explanations about the factors which affecting the price earnings ratio and the market values. They pointed out that there is a positive relationship between the common factors that affects P/E ratio such as the earnings growth, dividend growth and risk for P/E ratio itself, the additional factors, therefore such as the changes in the ownership which held by a corporation and an individual were also have a positive relationship for P/E ratio, for example is in *Nikkei* stocks. The increasing amount of P/E ratio and equity market capitalization of Japanese firms from 1979 to 1989 can be explained by many factors mention above. This research also intended to find the primary factors behind the dramatic increase in the price earnings ratios and the market values during 1980's which seemed having a relationship to the increases in earnings. It includes the changes in reported earnings and the changes in unreported earnings from hidden sources such as the investments in land. These results support the contention of Frankel's (1991) that dramatic rise in Japanese stock price during 1980's may not be a speculative bubble, but it is related to the economic factors.

During the economic crisis that felt by almost every Asian country, many countries in Asia have many difficulties to maintain their company's performance, especially their company's stock price. Later, after each country begin their economic recovery, we can see which countries could remain their stability in economic

performance and which countries that could not maintain their economic performance. In Asia, Japan is the most stable country in their economic performance and the others such as Indonesia is still in the post economic recovery position. It means that our country does not have a capability to finish the economic recovery well until nowadays.

Every country has its own estimation to indicate the economic recoveries which run well. For Japan self, it is indicated by many situation. They are the economic situation that is more stable, a good exchange rate, and company's performance of their country become well. Japan indicates a good performance of their company by seeing the price earnings ratio as a measurement. Indonesia also makes an economic recovery in the country especially in every company environments. It becomes one of the reasons to attract more domestic or foreign investors to invest in Indonesia. Most of the companies in Indonesia also make recovery to reflect their good company's performances. In the most commonly used to reflect that condition by seeing the price earnings ratios in every company.

P/E ratio is used by investors in order to decide which investment choices will have a beneficial future return. Investors need some analysis for determining the level of expected returns and level of risk (in doing investment activity). Therefore price earning ratio is needed as one of the indicator which could be used by investors as a guidelines to analyze stock of the company. On the other hand, price earnings ratio is an important component for indicating how much money (Rupiah) that should be paid by investors to get one rupiah of company earnings.

The fundamental analysis is an analysis which calculates the intrinsic values of a stock by using the company's financial data (Or Company analysis). These fundamental analyses have two approaches for calculating their intrinsic value of stock. The first approach is the present value approach and the second one is the price earnings ratios approach. The present value approach tries to appraise the present value by using a certain interest rate that is benefits earn by shareholders. Utilizing of this model, analysts need to appraise suitable profit by using risk factor and cash flow that will be received that is dividend. They also must combine both information to appraise the stock intrinsic values and also compare them with its' current market values. The approaches that are based on the cash flow namely the dividend discount model. These approaches have some weaknesses. As what written by Lesly and Jones (1991) in which they say that as long as investors are willing to have capital gains rather than dividend, it is not proper to focus only on dividend. Similarly, Haugen (2000) says that dividend present value which is not realistic, because nobody can predict how much dividends will be received by investors in a long term (in C.Ambar Puji Hartanto and Suwarto, 2003). When our focus is on price earnings ratios approach, it means that in determining the intrinsic value of stock, we must focus on earnings and prices as a major point of estimate. Generally, the fairly strategies uses prices earnings ratio to identify which are fairly stock priced, undervalued stock priced and overvalued stock priced by conducting the price earnings ratios with the intrinsic values which are appraised based on stock valuation model (Jogiyanto: 1998).

Management compares the company's price earnings ratios with the same company to decide the relative level of Market Company. In some cases, furthermore, analyst must be careful in comparing the same type of the company, because in certain develop industry such as electronic industry, it probably has more price earnings ratios rather than steel industry or automotive industry. This ratio interpretation also was influenced by the investor's perception towards the company's quality and revenue trend, relative risks, the use of alternative accounting methods, etc.

As what explained previously, Japan also uses the price earnings ratio to reflect their company's performance. The price earnings ratios itself have their own affecting factors. In Japan, instead of the common factors affecting price earnings ratios they also adds some factors such as land holdings, special accounting reserves, ownership structure and foreign investments. In Indonesia, those factors are rarely used to analyze the price earnings ratio. In the other hand, Japan researchers used those factors to prove their significant influences towards the price earnings ratios and market values. In Indonesia, land holdings and special accounting reserves rarely used these factors as a measurement basis. Japan put land holdings as one of numerous important aspects of the company's performance since the value of land in Japan is very expensive. Indonesia, on the contrary, viewed land holdings is not one of a significant factor which could affect the company performance.

Market value is the value of any assets or collection of assets, when traded in an organized market—or negotiated between private parties—is in an unencumbered

transaction without duress. Market value could be established through many transactions between individuals when there is not convenient organized market available. Despite of its potential variability, generally market value is regarded as a reasonable criterion for estimating the current value of individual balance sheet assets and liabilities, as what contrasted with their recorded value. It is frequently used in inventory valuation and capital investment analysis in which future recovery values must be estimated. This information was a beneficial information for investor to compare which company values are that would become the best comparison for market values. On the other hand, market value is one of the alternatives which are used to determine both which companies are more beneficial or less.

Beside price earnings ratios as the reflection element of the company's performance, market values are also conducted in this research as the elements which would reflect the company's performance. These values are managed here since their appearance in each company will affect the decision of the investors in the investment. Furthermore, are also many unanswered questions about factors relating with the changes in price earnings ratios and market values especially in Indonesian firms. This research, therefore, is intended to answer those questions.

Market values have the same affected factors with the price earnings ratios in this research. Since the market values become one of the predictors of the company's performance instead of the price earnings ratios. With the same affected factors it was expected that there would be more evidences concerning with the existence of the

price earnings ratios and market values as the reflector of the companies or firms performance.

Based on the previous phenomena, the writer is interested to investigate the common and additional factors that affect the price earnings ratios and market values in Japanese firms that also could be used as the factors that would affect price earnings ratios and market values in Indonesian firms. This investigation will be done in Jakarta Stock Exchange as a developing market. According to the background of the study, the writer entitles this thesis as follow: **Factors Affecting Price Earnings Ratio and Market Value of Indonesian Firms: An empirical examination of firms listed in Jakarta Stock Exchange for the period of 1999-2003.**

1.2. Problem Formulation

The problems of how those factors can determine their significantly influence towards price earnings ratios and market values in Indonesian firms is the reason of how well investor ability predict their investment choices. Furthermore, the existence of P/E ratio and market value as a predictor for future earnings can be resulted from common investigation and additional variables to P/E ratio and MV at a certain period.

Therefore, in analyzing P/E ratio and MV, we also investigate the factors which affect them. This research evaluates whether earnings growth, dividend growth, dividend pay out, standard deviation of earnings (risk) and ownership structure

affects P/E ratio and MV in Indonesian firms. This investigation is an empirical exercise. The research, furthermore, attempts to answer the following questions:

1. Do earnings growth, dividend growth, dividend payout ratio, risk and ownership structure influence P/E ratio?
2. Do earnings growth, dividend growth, dividend payout ratio, risk and ownership structure influence market value?

1.3. Problems Restriction

To restrict and give more focuses on the topics of this research, the observation will be done in:

1. Firms that listed in the Jakarta Stock Exchange (JSX) from period of 1999 to 2003.
2. Firms with the required data of positive earning.
3. Firms with the required data of dividend distribution.
4. Firms that are categorized as the financial institution is excluding here, to achieve the equality of the data presented in the financial statement.
5. Seven variables from ten variables that are observed by Constand, Freitas and Sullivan (1991). Three variables that excluded is the ownership changes held by financial institutions, land value and special accounting reserves. Those variables are excluded because the writer intended avoid unsignificant variables in this research.

1.4. Research Objectives

This research refers to a model which is stated by Constand, Freitas and Sullivan (1991), but this research is done in Indonesia and used Indonesian firms as a research area. Based on the problem formulation above, this research is conducted to analyze whether earnings growth, dividend growth, risk, dividend payout ratio, ownership structure held by corporation, ownership structure held by individual and ownership structure held by foreign investor affect price earnings ratio and market values of Indonesian firms.

1.5. Research Contributions

This research is expected to give many contributions to:

1. Investor

   The research will give a contribution especially in making decision and providing beneficial information in the conduct trades

2. The companies

   The research will give contribution to the company by giving inputs or supporting opinions and also as a consideration for making decisions in the future.

3. Academicians

   The research could give some contributions for conducting further researches especially about P/E ratio and market values.

1.6. Definition of Term

Key word: Price earning ratio, Market values, affecting factors of P/E ratio and market value. The writer will elaborate more about these terms.

Price earning ratio is a common ratio used for evaluating market price of share to earning per share.

Market value is the value of any assets, or a collection of assets when trade in an organized market or negotiated between private parties in an unencumbered transaction without duress.

Affecting factors of P/E ratio and MV in this research can be described as the factors that affect the value of P/E ratio and MV such as earnings growth, dividend growth, dividend payout ratio, risk and ownership structure.

CHAPTER II

REVIEW OF RELATED LITERATURE

Review of related literature gives many explanations about the relevant theories toward this research and to reconsider about the previous studies. Parts of this chapter elaborate more about stock market, fundamental analysis, definition of P/E ratio, definition of market values, fundamental factors, additional factors, relationship between P/E ratio and factors that affect it and the relationship between MV and factors that affect it. Previous studies and hypothesis will also be explained in this chapter.

2.1. The Stock Market

Theoretically, stock market defined as a trading in a long term security, whether in the form of stocks or bonds which is issued by government or private sectors. On the other hand, stock market was a narrow concept of the financial market. In the financial market, all kinds of bonds and owner's equity, short term funds and long term funds that are negotiable or not will be traded. According to Rosenberg (1983), stock market is the place through which the buying and selling of stock for the purpose of profit for both buyers and sellers of the security take place. The reason of why stock market exists in many countries is that because stock market operates two functions all at once. They are economic function and financial function (Husnan, 1993). As the economic function, the stock market has a function as the medium of two parties that need each other, namely facilitating the investor to invest at a certain

amount. As a financial function, a stock market gives chance to the investor in their investments regarding of the risks and levels of the expected return.

The stock market also supports the creation of efficient funds allocation. Through the stock market, the investors chose the investment alternatives which provide optimal return, by the assumption, investment with high return is the most productive sector in the market. Therefore, funds from the investor can be used productively by those companies or firms.

2.2. Fundamental Analysis

In analyzing and choosing which stocks could provide return in the future, there are two basis approaches or analysis, fundamental and technical analysis. Fundamental analysis is a study about financial condition of company that might describe the issued of stock behavior, with the assumption that the value of stocks are affected by company's financial performance. Financial performance here included risk and return from the stocks.

Fundamental analysis begins with the historical cost of the financial statements. The reasons of this action are to study the company's strength and weaknesses, identify growth and flow, evaluate operational efficiency and understanding company's characteristics and operational. For fundamental analysis, there are two approaches for calculating the intrinsic value of stocks, present value approach and price earnings ratios approach. Practitioners usually lean to use simply modes, understandable and based on the accounting information's.

The consequences of rational investor using this analysis which must be paid are as follows (Naiboho, 1989, in Kamal Fasa, 2004):

a) Higher price of one stock also have higher dividend growth for a long term growth occurrences.

b) Higher price of one stocks have higher prudent of dividend pay out ratio (if other factors is the same)

c) Higher price of one stock have lower risk (if other factors is constant)

d) Higher price of one stock if interest rate decline or lower (if other factors is the same)

2.3. Price Earnings Ratios (P/E Ratio)

The simple relationship between current or expected earnings per share and the current market price of the stock is often quoted by both management and the owners (Helfert, 1995). The ratio is called as price earnings ratio which become common measure that are used to indicate the market assessment of the company's performance and it can be stated:

$$PER = \frac{Market\ price\ per\ share}{Earnings\ per\ share}$$

Constand, Freitas, and Sullivan (1991) show that PER also can be stated as $PER = stock\ price\ (P_o) / earnings\ per\ share (EPS_1)$. Thus, a company's PE ratio on the expected growth rate in dividends as the risk of the company, which corresponds directly by using the required rate of return, and the dividend payout (D_1 / EPS_1) so that the company can achieve their purpose while it still maintain the growth rate.

This ratio shows how investors measure the price of stock from the earnings is multiple. For example, the value of P/E ratio is 5. It shows that the price of the stock is multiple from 5 times company's earnings (Kamal Fasa, 2004). If earnings used is yearly earnings and all earnings distribute in dividend, so the value of P/E ratio also 5 and it shows the period of payout stock purchasing as long as 5 years (Jogiyanto, 2000, in Kamal Fasa, 2004). P/E ratios also gives informations about how many Rupiah are needed to be paid by the investor for getting every Rp 1, 00 company's earnings (Eduardus Tandelilin, 2001, in Kamal Fasa, 2004).

Piece earnings ratio itself can be interpreted in many ways. Cragg and Malkiel (1982), and also Litzenberger and Rao (1971), for instance, viewed that P/E ratio as an indicator of earning growth. While Ball (1978) interpreted P/E ratio as a measure of the risk. Further Boatsman and Baskin (1981), and Alford (1992) supported the interpretation which is given by Graham et al. (1962), in which he mentions that P/E ratio is a measure of earnings capitalization rate (quoted in Asri Sw, 2002).

Price earning ratio is also part of market ratio where point of view of this market ration mostly based on the investor side or investor candidate (Hanafi dan Halim, 1996, in Anugrah, Nurul, Abdul Hamid Habbe, and M. Natsir Kadir, 2001). Besides that, a Price earnings ratio is a measurement to decide how market gives the valuation to company's stock (Kertonegoro, 1995, in Kamal Fasa, 2004). The expectation of investor of health stock analysis is done through the financial ratios such as P/E ratio, caused by, investors or candidates of investor's willingness to gain proper return from the stock investment. One advantage of P/E ratio approach is

easier to be used and more popular than the present value approach (Eduardus Tandelilin, 2001, in Kamal Fasa, 2004).

Valuation model with P/E ratio approach is more simply and practically used by analysts and other stock market agents. The advantages of using P/E ratios model are:

1. There is standard, makes the investors to be easier in making a comparison to other company.
2. If company does not distribute dividend for certain period, P/E ratio model is easier to be used rather than cash flow model.
3. It is easier to predict inputs on P/E ratios model than cash flow model.

According to Suad Husnan (1998), econometric model is used to predict which stock price is fairly or mispriced. This model is developed by Whitbeck and Kisor, where in measuring P/E ratios that reflect the intrinsic value uses an equation:

$$PER = a_0 + a_1 DPO + a_2 GR + a_3 SD$$

This equation shows that P/E ratios depend on some fundamental factors; they are dividend payouts (DPO), growth level (GR) and standard deviation of earnings or risk of earnings (Kamal Fasa, 2004).

The price earnings ratio or called by earnings multiple. The result of this formula is a simple factor. If diluted earnings differ significantly from the basic earnings per share, the calculation could be done on both bases. The earnings multiple is used quite commonly as a rough rule of thumb in valuing companies for the

purposes of acquisition to arrive at a first approximation value. The reverse of the earnings per share formula is so called earnings yield, which relates earnings per share to the market price. Although sometimes, it is used to express the current yield that the owner enjoys, the measure can be misleading, because earnings are not normally paid out in a full as dividends. Thus, the earnings yield cannot be compared to, for example, the yield on a bond where the interest payments are contractual cash remittances. As we already know, that the real economic return to the shareholder is a combination of the dividends received and the appreciation (decline) of the stock (Helfert, 2002).

2.4. Market Values (MV)

Market value referred as a fair market value that is the value of any asset or a collection of assets when it was traded in an organized market or negotiated between private parties in an unencumbered transaction without duress. The various securities and commodity exchanges are the examples of organized markets, as are literally thousands of regional and local markets and exchanges that enable buyers and sellers found mutually acceptable values of all kind of tangible and intangible assets. Market value is, of course, also established through the transactions between individuals when there is no convenient organized market available.

There's nothing absolute in market value. Instead, it represents a monetary consensus of two or more parties. The market value at any one time can, therefore, be subjected to the preferences and even whims of the individuals which involved the psychological climate prevalent in an organized stock exchange, the heat of a

takeover battle, significant industry developments, shifts in economic and political conditions, and so forth. Moreover, the volume of trading in the asset or security will influence the value placed on it by buyers and sellers.

Market value frequently used in inventory valuation and in capital investment analysis where the future recovery values have to be estimated. Yet the fact remains that market value is one of the most significant value concepts used in financial/economic analysis. It is closely related to economic value, because it is ultimately based on the parties' expectations about the future cash flows to be derived from the asset or business involved.

The choice of market values also complements the use of the incremental funding which both of them in the current market terms. The market value of common equity automatically (and implicitly) includes the retained earnings as reported on the balance sheet. Once again, we must be guided by the purpose of the analysis in order to decide which value is relevant. If we are interested in a criterion against which to judge expected returns from the future investments, the most common use of the cost of capital, we should use the current market values of the various types of capital of the company, because these values reflect the expectations of both creditors and shareholders (Helfert, 2002).

2.5. Company Fundamental Factors

2.5.1. Earnings Growth

Level of growth is the level of changes in the financial characteristics in a company. The common measurement of a company is seeing in its earnings. Earning,

in this case, is the amount of the remains funds after company paid all its expenses. To see the relevance comparison, which is commonly used is earnings per share (EPS). Therefore, earning growth is the level of changes of earnings per share in a company (Syahrul and Afdi Nizar, 2000, in Kamal Fasa, 2004). The formulation of earnings growth is:

$$Earnings\,Growth = \frac{EPS(end\ period) - EPS(beggining\ period)}{EPS(beggining\ period)}$$

The proxy earnings growth in this research is the percentage change in the expected growth rate in the earnings from 1999 to 2003.

Nowadays, FASB and SEC require the measurement of earnings per share on two basic measurements. Firstly, primer earnings per share, which used average stock prices that really revolve in that period. Secondly, basic assume all potential stocks that revolved is counted and added to the real revolve stocks.

Growth in earnings should influence both a firm's P/E ratio and market value of equity. If stock prices reflect a capitalization of expected future earnings, increase earnings should be associated with an increase in share price and in total market capitalization. If investors believe that higher rate of growth in earnings is sustainable, the P/E ratios should rise (Constand, Freitas, Sullivan, 1991).

2.5.2. Dividends Growth

The proxy of dividends growth in this research is the percentage change in the expected growth rate in dividends from 1999 to 2003. Dividends growth it self is described by the changes of dividends per share over the period. Dividends are

generally declared on a per share basis every quarter by a corporation's board of director, the elected representatives of the shareholders. Therefore no calculation is necessary. Dividend policy is the prerogative of the board, which has a legal authority to set the payments at any level of it, deems appropriate (Helfert, 2002).

The increasing dividends per share can indicated that there is an increase in earnings per share and stock price. Therefore, if there is an increase it can be measured as a proxy of the permanent component in earnings per share.

2.5.3. Dividend Payout ratio (DPO)

A ratio that commonly used in connecting with dividend policy is called as dividend payout ratio, in which it represents the proportion of earnings paid out to the shareholders in the form of cash during any given year:

$$DPO = \frac{cash\,dividend\,pershare}{earnings\,per\,share} \times 100\%$$

Dividend payout ratio also is compared between paid dividends and net earnings that is resulted by the company, and it is usually in the form of percentage (Basri and Indriyo Gitosudarmo, 1995, in Kamal Fasa, 2004). Dividend policy involves two parties. There are shareholders and company that have different interest. This policy mentions dividend which is paid by the company including the amount of dividend that is paid and the amount of retained earning for the company purpose.

This study examines the relation between the percentage change in the dividend payout ratio from 1999 to 2003, a period of changes in the P/E ratios and market value. Since investors are assumed to be willing to pay more for a share of

stock that pays higher dividends, other things held constantly, an increased payout suggests a higher P/E ratio (Constand, Freitas, Sullivan, 1991).

2.5.4. Risk

According to Suad Husnan (1994), risk can be defined as deviation of actual earnings from the expected earnings. The bigger deviation caused bigger risk. Standard deviation of earnings means that deviation of real growth earnings with the expected growth earnings is counted by the average earnings growth (C. Ambar Puji Hartanto and Fx. Suwarto, 2003). Similarly Van Horne and Wachowics (1992), pointed out that risk is the return variability for the expected return. Most of the methods are used to measure risk is the standard deviation that absolutely measure the deviation of values happens with the average as expectation value (Jogiyanto, 1998).

Based on the previous study, most of them conclude that risk has an inverse relationship with the P/E ratio, since risk itself associated with the earnings stream which is captured by the discount rate (r) that is a function of systematic, market-based risk (Constand, Freitas, Sullivan, 1991).

2.6. Additional Factors

2.6.1. Ownership Structure

Ownership structure can be described from two pints of views (Ituriaga and Sanz, 2000 in Machfoedz dan Suranta, 2003). There are agency approach and asymmetric information approach. Agency approach treated ownership structure as an instrument or tools to reduce the interest conflict among each holder. Asymmetric information approach, in the other hand, treated ownership structure mechanism as

one way to reduce the unbalance information between insiders and outsiders through information disclosure in stock market (Leland and Pyle, 1977).

The structure of ownership in shareholders, commonly, divided as managerial holder, institutional holder and foreign individual and corporations holder. Agency theory described that the interest of management might be in contradiction with individuals holders. This is because managerial always gives a priority to their own interest and institutional holder doesn't like those attitudes. Therefore this conflict should be minimized by those parties to emerge the suitable performance that is reflected by company, so company's performance will invite more investment.

According to Slovin and Sushka (1993), institutional ownership does not always increase firm value and performance. Institutional ownership could decrease the value of the firm when the institutional and managerial interests have the same direction. In this case, institutional and managerial have the same interest then they will do collusion that will decrease company's performance or value.

Claessens et al. (2000) said that there is no clear distinction between ownership and control to firms listed in Jakarta Stock Exchange. Most of the firms are family firms and manager hand by majority shareholders. If there is not, so manager still handy by member of family. The consequence of this is that the opinions of the majority shareholders will also be the opinion of manager. In Jakarta Stock Exchange, only small portion of stock will issued to the market. Most of the stocks are hold by family. This condition caused every control mostly done by those families. These big controls of family will make them easily to control every strategy

policies such as funds and investment strategy (Machfoedz and Suranta, 2003). This condition will cause a big impact to the company's performance especially in this case is the price earnings ratio.

The different interests between managerial and institutional ownership usually is called by agency conflicts. These conflicts could be minimized through a certain monitoring that could be equal with those interests. The impact of this monitoring is the occurrence of one cost called by agency cost (Wahidahwati, 2001). And the reducing of these costs suggests an increase in the share price, P/E ratios and market value of the firm if the other factors are held constantly. The increase of the cross ownership may also impact the share prices and market value through a supply constrain effect. If the percentage ownership which are held by the affiliated firms increases without issuing additional shares of stock, the supply of shares is available for the public trading decreases and, given a constant demand, share price and market value of equity might be increased. This supply effect may also affect P/E ratios and market values.

Because of the reasons which are discussed above, cross ownership of corporate stock may affect PE ratios and firm market value in three ways. First, we expect firms with large cross-holdings or substantially increasing cross-holdings to demonstrate greater increases in PE ratios and market value. Second, due to the decreased financial risk we expect there will be an increase in P/E ratios and market value for firms whose stock is increasingly that being held in friendly hands. Third, a

supply effect may cause share price to increase for reasons not corresponding to corporate earnings.

2.7. Previous Studies

The ability of P/E ratios and market value as the predictor for the investor's future earnings has been examined by many researchers. The first study was done by Whitebeck and Khisor (1963) who used three variables that estimated affected P/E ratio. There are growth earnings, dividend payout ratio and standard deviation of earnings. The result showed that the earnings growth and dividend payout ratio have a positive influence to P/E ratios and standard deviation of earnings has a negative influence to P/E ratios. The equation:

$$PER = 8.2 + 1.50(\textit{tingkat pertumbuhan laba}) + 0.067(\textit{dividend payout ratio}) - 0.200(\textit{standard deviation of earnings})$$

If one stock estimate has the growth earnings of 12%, dividend payout ratio is 50% and standard deviation of earnings is 5, therefore with the plug in those numbers into the equation, we will get the amount of P/E ratios as 28,55. If the stock has P/E ratio under 28.55, this stock as a candidate of purchased stock, but in contrary, if it is over of 28.55 this stock as a candidate for short selling.

Jones (2000) described three main factors that affecting P/E ratio estimation. They are dividend payout ratio, required rate of return and rate of expected dividend growth. Dividend payout ratio and dividend growth are expected to have positive influence to P/E ratio and the required rate of return has a negative influence to P/E ratio.

Ball (1992) reviewed the earnings-price anomalies and delineated two choices of explanation for the anomalies. The first involves the failure of the capital market and suggest that the market truly is inefficient. Ball (1978) also suggests that the P/E ratio operation is used as a risk measure.

Penman (1996) clarifies a number of issues of the relationship between the P/E ratio and the market to book ratio P/B. He demonstrates that P/E ratio could indicate the future growth in earnings which is positively related to the expected future return on equity and negatively related to current return on equity. The P/B ratios reflect only on the expected future return on equity. He also provides further empirical evidences, consistent with the work of Fuller, Hurberts and Levinson (1992) who stated that portfolios based on the P/E ratios rank order expose changes in the future earnings from the current earnings for a number of many years ahead.

C. Ambar Puji Hartanto and Suwarto (2003) examine the influence of the earnings growth, dividend payout ratio, and standard deviation of earnings to P/E ratio. This research was also done to see whether P/E ratio could be used to evaluate fairly stock priced on consumption industry in Jakarta Stock Exchange. Period of this research period are in 1997 and 1998 and it showed the result only on the growth earnings which have a positive influence and a significant statistic to P/E ratio. Meanwhile dividend payout ratio and standard deviation of earnings statistically are not significant, it means that dividend payout ratio and standard deviation of earnings does not influence P/E ratio of consumer goods in industry sector in Jakarta Stock Exchange.

Using sample data of Nikkei stocks, Constand, Freitas and Sullivan (1991) show that the ownership structure of corporation, individual and financial institution; standard deviation of earnings; earnings growth; dividend growth have positive and significant influences to P/E ratio of Nikkei stocks. Meanwhile land holdings; ownership structure of foreign individuals, mutual funds and individual; dividend payout ratio; special accounting reserves have negative or no significant influences to P/E ratio. And also for market values there are only land holdings; ownership structure of corporation and foreign; dividend growth; special accounting reserves that have positive influence. The rest of the variables such as the ownership of individuals and financial institutions, standard deviation of earnings, earnings growth and dividend payout ratio have negative influences to market value.

2.8. Hypothesis Formulation

Sugiono (1999) states that, Hypothesis is a temporary answer of a research problem that is assumed to be the correct answer in order to draw the logical conclusion, while a testing is needed to prove the correctness of the hypothesis.

Based on the problems and the purpose which is expected to be achieved, the hypotheses on this research are formulated as follows:

1. There is a positive effect of earnings growth on P/E ratio.
2. There is a positive effect of dividend growth on P/E ratio.
3. There is a negative effect of risk on P/E ratio
4. There is a positive effect of dividend payout ratio on P/E ratio.

5. There is a positive effect of ownership structure which is held by corporations on P/E ratio.
6. There is a positive effect of ownership structure which is held by individual on P/E ratio.
7. There is a negative effect of ownership structure which is held by foreign investors on P/E ratio.
8. There is a negative effect of earnings growth on MV.
9. There is a positive effect of dividend growth on MV.
10. There is a negative effect of risk on MV.
11. There is a negative effect of dividend payout ratio on MV.
12. There is a positive effect of ownership structure which is held by corporations on MV.
13. There is a negative effect of ownership structure which is held by individual on MV.
14. There is a positive effect of ownership structure which is held by foreign investors on MV.

The Hypotheses formulation above can be summarized by the following table 2.1

TABLE 2.1
HYPOTHESIS FORMULATIONS

Independent Variable	Sign of Effect	Dependent Variable
1. Earnings Growth	+	P/E Ratio
	-	MV
2. Dividend Growth	+	P/E Ratio
	+	MV
3. Risk	-	P/E Ratio
	-	MV
4. Dividend Payout Ratio	+	P/E Ratio
	-	MV
5. Ownership Structure Held by Corporations	+	P/E Ratio
	+	MV
6. Ownership Structure Held by Individual	+	P/E Ratio
	-	MV
7.Ownership Structure Held by Foreign Investor	-	P/E Ratio
	+	MV

CHAPTER III

RESEARCH METHOD

3.1. Research Method

The method which is used in this research is the purposive sampling method. In this method, the sample is found based on the core variable representing this research. Purposive sampling method is a technique of taking samples based on certain considerations, namely considerations on the basis of the purpose of the research (Sugiono, 1999). This research is emphasized on the relationship between price earnings ratio with its' affecting factors, and also market value with its' affecting factors of companies that listed at the Jakarta Stock Exchange. This research, furthermore, is also intended to observe what kinds of factors which have dominant influences to both P/E ratio and Market values, in which it will be a beneficial information for investors to make decision.

3.2. Population and Sample

Population is a group or collection of data that becomes a target of the research or a group of something regarding where a problem is exist (Dewi, 2004). The populations of this research are 283 companies from all sectors of industries that listed at the Jakarta Stock Exchange in the period of 1999-2003. The companies were chosen based on the available data and the completeness of the data, the 283 companies are selected because they can fulfill the requirement of the data in this research. Sample is a partial of population that becomes the object of the research.

The companies that are chosen as the sample of this research are 187 companies that listed at the Jakarta Stock Exchange in the period of 1999-2003.

The companies that are chosen as a sample are the companies that have sources of data as follows:

a) Firms which are listed at the JSX those announced positive earning per share in the period of 1999-2003. This criteria is to avoid the negative amount of PER.

b) Firms which requires data of dividend distribution in the period of 1999-2003.

c) Companies publish financial statement in the period of 1999-2003.

d) Data includes company's ownership structure percentage which are gathered from ICMD (Indonesia capital market directory) and JSX Statistics.

3.3. Data Collection

This research is conducted by using all relevant secondary data which could be collected from the various reliable sources, such as www.jsx.co.id, JSX statistics and JSX Fact book. The data are also taken from ICMD (Indonesia Capital Market Directory), Capital Market Data Base PPA FE UGM Jogjakarta and also at the JSX data base at JSX corner FE UII Jogjakarta. Data that are chosen are: Price earnings ratio, market value of equity, earnings per share, dividend per share, dividend pay out ratio, percentage ownership that is held by institutional, corporations and foreign individuals. Data collection and the sources of data are taken from the company listed at JSX with the considerations that JSX is the biggest stock market in Indonesia, and it also could be accessible for gathering the data and provide the complete data.

3.4. Research Variable

Variables that were used in this research as follows:

1. Price earnings ratio (PER_t)

Price earnings ratio (PER) is the ratio of the stock price to earnings per share. PER is formulated through:

$$PER = \frac{market\ price\ per share}{earnings\ per share}$$

In this research price earnings ratio is computed in the term of percentage change. And the percentage change in PER is formulated through:

$$Percentage\ Change\ in\ PER = \frac{PER_t - PER_{t-1}}{PER_{t-1}}$$

Where PER_t is the amount of PER in the current year and the PER_{t-1} is the amount of PER in last year.

2. Market Value (MV_t)

Market value of the firm or market value of equity is the market value of a company's equity plus the market value of its' debts. On the other hand, market value of equity is the market capitalization of the firms at the end of the year, in the period of 1999-2003. MV is formulated through:

$$MV = market\ price\ per\ share\ x\ number\ of\ shares\ outstanding$$

In this research MV is computed in the term of percentage change. And the percentage change in MV is formulated as follows:

$$Percentage\ Change\ in\ MV = \frac{MV_t - MV_{t-1}}{MV_{t-1}}$$

Where MV_t is the amount of market capitalization in the current year and the MV_{t-1} is the amount of market capitalization in the last year.

3. Earnings Growth (EG_t)

Earnings growth or the percentage change in EPS for the period of 1999-2003 is formulated through:

$$EG = \frac{EPS_t - EPS_{t-1}}{EPS_{t-1}}$$

Where EPS_t is the amount of EPS in the current year and the EPS_{t-1} is the amount of EPS in the last year.

4. Dividends Growth (DG_t)

Dividends growth or the percentage change in DPS for the period of 1999-2003 is formulated through:

$$DG = \frac{DPS_1 - DPS_0}{DPS_0}$$

Where DPS_1 is the amount of dividend per share distributed in the current year and DPS_0 is the amount of dividend per share distributed in the last year.

5. Risk (SD_i)

Standard deviation of earnings is risk investment indicator that is taken from historical data of EPS in the period of 1999-2003. Risk is also a deviation of the actual condition with the expected condition of something. In this research risk is VARTOTRAHDT that is the total firms risk measured by arithmetic average method with the daily return data in the same year (in year). VARTOTRAHDT formulated as follows:

$$VARTOTRAHDT_t = \frac{\sum_{t=t}^{a}(RETH_i - RATARAHDT)^2}{n}$$

Where RATARAHDT is the daily arithmetic average return in years, a is the beginning period that is January 1, xxx, t is the effective date in years xxx and n is the amount of total days.

The VARTOTRAHDT here is computed in the percentage change term. So the percentage change in risk is formulated through:

$$Percentage\ Change\ in\ Risk = \frac{Risk_t - Risk_{t-1}}{Risk_{t-1}}$$

Where $Risk_t$ is the amount of risk in the current year and the $Risk_{t-1}$ is the amount of risk in the last year.

6. Dividend Payout Ratio (DPO_i)

Dividend payout ratio is ratio that shows earnings paid as dividend to the investors. This ratio came from DPS that is divided by EPS. Dividend payout

ratio is formulated through:

$$DPO = \frac{Dividend\ Per\ Share}{Earning\ Per\ Share}$$

In this research DPO is computed in the term of percentage change in DPO for the period 1999-2003. The percentage change in DPO formulated as follows: $Percentage\ Change\ in\ DPO = \frac{DPO_t - DPO_{t-1}}{DPO_{t-1}}$

Where DPO_t is the amount of dividend payout ratio which is computed in the current year and the DPO_{t-1} is the amount of dividend payout ratio which is computed in the last year.

7. Ownership Structure held by Corporations ($CORP_i$)

Ownership structure which held by corporations is the percentage share change in the share of ownership that is held by non financial corporation from 1999-2003 for company i.

8. Ownership Structure held by Individual ($INDV_i$)

Ownership structure held by individual is the percentage share change in the share of ownership held by individual Indonesian investors from 1999-2003 for company i.

9. Ownership Structure held by Foreign investors (FOR_i)

Ownership structure held by foreign investor is the percentage change in the share of ownership that is held by foreign individuals, mutual funds, and corporations through the period of 1999 to 2003 for company i.

3.5. Research Procedures

In order to answer the research problems, it is imperative to conduct research procedures. The procedures were arranged as follows:

- Identifying all of the companies that would become the proper samples in this research.
- Listing all of the companies at the Jakarta Stock Exchange that are listed in the period of 1999-2003.
- Checking all of the data that will be used as variables in this research in the ICMD period of 2001, 2002 and 2003 at JSX corner of FE UII Jogjakarta.
- Doing calculation of variables that are needed in this research.
- Doing the statistical test to find out whether there was a significant variation on the relationship among the variables. To predict the relationship form of dependent and independent variable, the regression analysis is used in this research. Based on the regression equation, it will also be determined the standard error of estimate to measure the dispersion from actual data around the regression line. Furthermore the quantitative analysis of probability value (ρ value) approach is used to determine whether the result of the regression analysis is significant or not.

- Analyzing and interpreting the data.
- Deriving some conclusions and any other findings.

3.6. Technique of Data analysis

The data analysis that is used in this research is Least Square Regression model. The steps analysis is divided into three groups of framework based on the hypothesis, and then formed the regression model and formulate the hypothesis testing.

The steps Analyses are explained as follows:

1. First is finding the effects of each affected factors of P/E ratio to P/E ratio itself.
2. Second is finding the effects of each affected factors of MV to MV itself.
3. Third is testing the hypothesis and deriving the conclusion.

More explanation about the analysis:

a) First analysis is finding the effect of affected factors of P/E ratio on P/E ratio itself.

The framework of the first assumption is the affected factors of P/E ratio such as earnings growth, dividend growth, dividend payout ratio, standard deviation of earnings (risk) and ownership structure that will impact the fluctuations of P/E ratio which is represented by yearly periods.

The variables that are used here:

Dependent Variable : Price Earnings Ratio of company $_i$ (PER_i)

Independent Variable : Earnings Growth (EG_i), Dividends Growth (DG_i), Risk (SD_i), Dividend Payout Ratio (DPO_i) and ownership structure that are held by corporations($CORP_i$), individual($INDV_i$) and foreign investors(FOR_i).

The least square model that are used:

$$PER = \alpha + \beta_1 EG_i + \beta_2 DG_i + \beta_3 SD_i + \beta_4 DPO_i + \beta_5 CORP_i + \beta_6 INDV_i + \beta_7 FOR_i + \varepsilon \quad ...3.1$$

In this case:
α = Intercept from the regression line
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = Coefficient of variable
ε = Residual Error

b) Second is finding the effect of factors affected of MV to MV it self.

The second assumption framework is the affected factors of MV such as earnings growth, dividends growth, risk, ownership structure and dividend payout ratio will impact the fluctuations of MV that is represented by yearly periods.

The variable which are used here:

Dependent Variable : Market value of company$_i$ (MV_i)

Independent Variable : Earnings Growth (EG_i), Dividends Growth (DG_i), Risk (SD_i), Dividend Payout Ratio (DPO_i) and ownership structure that are held by corporations($CORP_i$), individual($INDV_i$) and foreign investors(FOR_i).

The least square model that are used:

$$MV = \alpha + \beta_1 EG_i + \beta_2 DG_i + \beta_3 SD_i + \beta_4 DPO_i + \beta_5 CORP_i + \beta_6 INDV_i + \beta_7 FOR_i + \varepsilon \quad ...3.2$$

In this case:
α = Intercept from the regression line

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = Coefficient of variable
ε = Residual Error

3.7. Formulated Hypothesis and Hypothesis Testing

3.7.1. Formulated Hypothesis

Based on the problem statements and the review of the related literature, the alternatives hypothesis and the null hypothesis that are proposed in this research are:

1. Ho = earnings growth do not affect positively the amount of P/E ratio.

   Ha = earnings growth affect positively the amount of P/E ratio.

2. Ho = dividend growth do not affect positively the amount of P/E ratio.

   Ha = dividend growth affect positively the amount of P/E ratio.

3. Ho = risk do not affect negatively the amount of P/E ratio.

   Ha = risk affect negatively the amount of P/E ratio.

4. Ho = dividend payout ratio do not affect positively the amount of P/E ratio.

   Ha = dividend payout ratio affect positively the amount of P/E ratio.

5. Ho = ownership structure that is held by corporations do not affect positively the amount of P/E ratio.

   Ha = ownership structure that is held by corporations affect positively the amount of P/E ratio.

6. Ho = ownership structure that is held by individual do not affect positively the amount of P/E ratio.

   Ha = ownership structure that is held by individual affect positively the amount of P/E ratio.

7. Ho = ownership structure that is held by foreign investor do not affect negatively the amount of P/E ratio.

   Ha = ownership structure that is held by foreign investor affect negatively the amount of P/E ratio.

8. Ho = earnings growth do not affect negatively the amount of MV.

   Ha = earnings growth affect negatively the amount of MV.

9. Ho = dividend growth do not affect positively the amount of MV.

   Ha = dividend growth affect positively the amount of MV.

10. Ho = risk do not affect negatively the amount of MV.

    Ha = risk affect negatively the amount of MV.

11. Ho = dividend payout ratio do not affect negatively the amount of MV.

    Ha = dividend payout ratio affect negatively the amount of MV.

12. Ho = ownership structure that is held by corporations do not affect positively the amount of MV.

    Ha = ownership structure that is held by corporations affect positively the amount of MV.

13. Ho = ownership structure that is held by individual do not affect negatively the amount of MV.

    Ha = ownership structure that is held by individual affect negatively the amount of MV.

14. Ho = ownership structure that is held by foreign investors do not affect positively the amount of MV.

Ha = ownership structure that is held by foreign investors affect positively the amount of MV.

The null statement hypotheses and alternative statement hypotheses above can be stated in terms of mathematical sign or statistics by the following table 3.1

TABLE 3.1 MATHEMATICAL SIGNS OF HYPOTHESIS

Ho_1	$\beta_1 \leq 0$	Refer to the equation of 3.1
Ha_1	$\beta_1 > 0$	
Ho_2	$\beta_2 \leq 0$	Refer to the equation of 3.1
Ha_2	$\beta_2 > 0$	
Ho_3	$\beta_3 \leq 0$	Refer to the equation of 3.1
Ha_3	$\beta_3 > 0$	
Ho_4	$\beta_4 \geq 0$	Refer to the equation of 3.1
Ha_4	$\beta_4 < 0$	
Ho_5	$\beta_5 \leq 0$	Refer to the equation of 3.1
Ha_5	$\beta_5 > 0$	
Ho_6	$\beta_6 \leq 0$	Refer to the equation of 3.1
Ha_6	$\beta_6 > 0$	

Ho_7	$\beta_7 \geq 0$	Refer to the equation of 3.1
Ha_7	$\beta_7 < 0$	

Ho_1	$\beta_1 \geq 0$	Refer to the equation of 3.2
Ha_1	$\beta_1 < 0$	
Ho_2	$\beta_2 \leq 0$	Refer to the equation of 3.2
Ha_2	$\beta_2 > 0$	
Ho_3	$\beta_3 \geq 0$	Refer to the equation of 3.2
Ha_3	$\beta_3 < 0$	
Ho_4	$\beta_4 \geq 0$	Refer to the equation of 3.2
Ha_4	$\beta_4 < 0$	
Ho_5	$\beta_5 \leq 0$	Refer to the equation of 3.2
Ha_5	$\beta_5 > 0$	
Ho_6	$\beta_6 \geq 0$	Refer to the equation of 3.2
Ha_6	$\beta_6 < 0$	
Ho_7	$\beta_7 \leq 0$	Refer to the equation of 3.2
Ha_7	$\beta_7 > 0$	

3.7.2. Hypothesis Testing

The hypothesis testing will be done by using the multiple regression equation in order to find the relationship between the dependent and independent variables that are used in this research.

After finding the regression results, the hypothesis testing was done by analyzing the significance of coefficient and variable. The analysis steps are described in detail as follows:

- Draw the multiple regression equation and find the result.
- Determine the t-statistics for each hypothesis which can be calculated using SPSS12.0.

This research used the significant level of 95% or $\alpha = 5\%$. The data, then, were processed by using SPSS 12.0 (statistical package for social science) computer software. The first up to seven hypotheses which referred to the equation of 3.1 were tested by analyzing the coefficient (slope or β_i) of the earnings growth coefficient, dividend growth coefficient, dividend payout ratio coefficient, risk coefficient, ownership structure which is held by corporation coefficient, ownership structure which is held by individual coefficient and ownership structure which are held by foreign investors coefficient on the amount of price earnings ratio variable. For the first until the seven hypotheses, they refer to the equation of 3.2 and then were tested by analyzing coefficient (slope or β_i) of the earnings growth coefficient, dividend growth coefficient, dividend payout ratio coefficient, risk coefficient, ownership

structure which are held by corporations coefficient, ownership structure which is held by individual coefficient and ownership structure which are held by foreign investors coefficient on the amount of the market value variable.

- Test the significance of the regression coefficient for the first until the seven hypotheses refer to the equation of 3.1 and 3.2 that have already been described previously are determined by using the probability value of estimated error approach (ρ-value approach) to observe the significance level of the regression coefficient. The determination of the accepted or rejected Ho is based on the ρ-value result. **If ρ-value of β from 3.1 and 3.2 equation is greater than the significant level (α = 0.05), Ho is failed to reject. In contrary, if ρ-value is smaller than the significant level which is chosen (α = 0.05), the Null Hypothesis (Ho) is rejected.**

3.8. The Test of The Classical Assumption of Regression

3.8.1. The Multicollinearity Test

The first and second regression equation of this research has seven independent variables, namely, earnings growth, dividend growth, risk, dividend payout ratio, and ownership structure that are held by corporation, individuals and foreign. In the multiple regression equation (regression with more than one independent variable) it is important to use or apply the Multicollinearity test.

Multicollinearity is an event which informs that there is a correlation among the independent variables. The existence of multicollinearity can be seen in the

calculation results of the Tolerance (TOL) and Variance Inflation Factor (VIF). Gujarat (1995) stated that a variable would have a high collinearity if its VIF is more than 10 (ten) or its tolerance tends to be closed to zero.

The measurement of multicollinearity can be in the form of the mathematical calculation as follows:

$$VIF = \frac{1}{(1-R^2)}$$

VIF is the variance of inflation factor and

R^2 is a coefficient of determination (R Square).

3.8.2. Heterocedasticity Testing

The condition of heterocedasticity occurs when the dispersion of individual errors around the population regression function changes for every observation. Regression model is considered good if there is no heterocedasticity. The detection of presence of heterocedasticity can be conducted by analyzing Scatterplot graphic from the regression analysis. If the dots spread randomly and do not form any clear pattern. It can be concluded that heterocedasticity does not exist, it will prove that the data was valid and it is free from the bias

3.8.3. Outlier Testing

Outlier test in this research is done by using cook's distance value of 0.01. If the result of the cook's distance value is lower than 0.01 the data is free from the bias; if it is not the data is not free from the bias.

CHAPTER IV

RESEARCH FINDINGS, DISCUSSIONS AND IMPLICATIONS

This chapter will explain the early process of gathering the data, the measurement of variables used in this research, the data analysis and the interpretation of hypothesis testing which includes the explanations about the research findings, discussions and research implications.

4.1. Research Descriptions

4.1.1. Research Preparation

This research was started by studying the literature, journals and websites to get the relevant topic to conduct a research. The data are needed in this research were gathered from the Capital Market Data Base PPA FE UGM Yogyakarta, Indonesia Capital Market Directory books that are owned by Jakarta Stock Exchange Corner at FE UII Yogyakarta and other relevant sources (JSX Fact Book and JSX Statistics) with the data criterion:

a . Companies selected as samples of this research are finally obtain 187 companies over the period 1999-2003 which have been shorted and which can fulfill the requirements as a sample in this research with the complete data based on the research variables. The companies were listed in JSX at the period of 1999-2003 with the appropriate data and the completeness of the data for the research requirements.

b . The data that were used in this research include the information of the ownership structure from the companies (187 companies) in the JSX at the period of 1999-2003, the data include: Price Earnings Ratio, Market Capitalization (Market Value), Earning per Share, Dividend per Share, Dividend Payout Ratio and Risk of each company over the period of 1999-2003.

c . Each period of this research from 1999-2003 have different amount of companies. In 1999, the samples are 25 companies, in 2000 the samples are 26 companies, in 2001 the samples are 40, in 2002 the samples are 46 companies and in 2003 the samples are 50 companies.

4.1.2. Research Process

The data that are used in this research are quantitative data that was gathered from the Capital Market Data Base PPA FE UGM Yogyakarta, Capital Market Data Base of JSX Corner FE UII Yogyakarta and also from other relevant sources such as JSX Fact Book and JSX Statistics. The companies that become the object of this research are 187 Go Public companies that are listed in JSX for the period of 1999-2003. They were selected because they could fulfill the requirements of this research. Having found the appropriate data completely, the measurement of earnings growth, dividend growth, and the entire percentage change amount for the all variables.

The hypothesis testing is done by statistical testing method, for the measurement of variable. Microsoft Excel was used and the data were then processed by using SPSS 12.0 for the statistical calculation.

4.2. Research Findings and Discussions

4.2.1. Descriptive Statistics

Descriptive statistics is needed to observe the sample characteristics that are used in this research. In detail, the sample characteristics are shown in table 4.1. From the table below, we find the sample amount, minimum and maximum value, mean and the standard deviation of each variable that are used.

TABLE 4.1
DESCRIPTIVE STATISTICS

Variables	N	Minimum	Maximum	Mean	Std. Deviation
PER	187	-.9942429	81.0633060	1.233714027	6.3608882861
MV	187	-.9405714	14.2576969	.474745434	1.6386667441
EG	187	-.9468599	37.4800000	.356236265	2.9303555775
DG	187	-.9626269	99.1080893	.961311117	7.4213671789
SD	187	-1.0000000	7.2500000	.108351171	1.1765334229
DPO	187	-.9922037	126.5767723	2.115824792	9.8707563323
CORP	187	-.9900000	6.1060820	.060398619	.6436842247
INDV	187	-.9934930	96.8333333	1.153112541	8.4970711242
FOR	187	-.8977937	570.8000000	3.413491531	41.7484494873
Valid N (listwise)	187				

4.2.2. The Hypothesis Testing which Focused on The Significance Level of Linear Regression Coefficient.

The test for the first and seven hypotheses of the 3.1 and 3.2 equations were done by identifying the coefficient (slope or β_i) of earnings growth, dividend growth, risk, dividend payout ratio, ownership structure which are held by corporations, ownership structure that are held by individual and ownership structure that are held by foreign investors. If the coefficient (slope or β_i) is in conformity

with the hypothesis alternatives, therefore the hypothesis alternatives will be accepted. To observe the significance level of the regression coefficient, the writer uses the probability value approach (ρ-value approach). The determination of accepting and rejecting Ho is based on the ρ-value result. If ρ-value of β from 3.1 and 3.2 equation is greater than the significant level (α =0.05), so that the Null Hypothesis (Ho) is failed to reject, it means the independent variable is not significant to the dependent variable. Meanwhile, if ρ-value is smaller than the significant level that is chosen (α =0.05), so that the Null Hypothesis (Ho) is rejected, it means the independent variable is significant to the dependent variables. The regression analysis results for each equation are described as follow:

4.2.2.1. The 1-7 Hypothesis refers to the equation of 3.1 are to find the effect of Earnings Growth, Dividends Growth, Risk, Dividend Payout Ratio, Ownership Structure Held By Corporations, Ownership Structure Held By Individual and Ownership Structure Held By Foreign Investor on the amount of Price Earning Ratio.

After arranging all the data that are available for this test and arranging them into one basket (since this research use pooled cross section method), the test of the first until seven hypotheses which refer to the equation of 3.1 is done by identifying the coefficient (slope or β_i) of EG, DG, SD, DPO, CORP, INDV and FOR on PER. The use of the multiple regression method so that coefficient (slope or β_i) and ρ-value result of the first linear regression for each independent variable could be described as follow:

TABLE 4.2
RESULT OF THE LINEAR REGRESSION TEST EQUATION 3.1

Independent Variables	β_i	t-Statistics	ρ-value of t	Significance level
EG	-0.270	-1.996	0.048	Significant
DG	-0.356	-3.868	0.000	Significant
SD	-0.192	-1.664	0.098	Not Significant
DPO	0.346	6.338	0.000	Significant
CORP	0.228	0.514	0.608	Not Significant
INDV	0.001	0.046	0.964	Not Significant
FOR	0.442	5.348	0.000	Significant

Table 4.2 shows that approximately 57% of the test showed significant in results. Independent variables SD (risk), CORP (Ownership structure held by corporations) and INDV (Ownership structure held by individual) are not significant on PER. While Variables EG, DG, DPO and FOR are significant on PER.

Testing the **first hypothesis**, we analyze the coefficient of EG (β_1). The table shows that the amount of β_1 is -0.270. It means that EG is negatively affect the amount of PER, therefore according to hypothesis formulation and table 3.1, Ho is fail to reject. Even EG is significantly related to PER but this research shows that EG is negatively significant related to the amount of PER. It means that for each the increase in one unit EG, it will cause the decrease amount of PER by 0.270, which are hold by other variables constant. This result is not consistent with what Constand, Freitas and Sullivan (1991) said in which they stated that EG is positively significant related to the number of PER. It might be happen since earnings growth presented in Japanese firm shows a positive trend over the research period of 1979-1989, it means

Japanese firm shows a positive trend over the research period of 1979-1989, it means that their earnings growth indicate the increasing amount every year. Conversely, earnings growth presented in Indonesian firms shows a negative trend over the research period of 1999-2003. This result is also not consistent with what C. Ambar Puji Hartanto and Suwarto (2003) stated that EG is positively significant related to PER. It might be because the research period that they used is from 1997-1998 and the research is only done at manufacturing firms that are listed in JSX. While the period of this research is 1999-2003 and then analyzing all of those firms based on the research criteria.

Testing the **second hypothesis**, we analyze the coefficient of DG (β_2). The table shows that the amount of β_2 is -0.356. It means that DG is negatively affect the amount of PER, therefore according to the hypothesis formulation and table 3.1, Ho is fail to reject. Even DG is significantly related to PER but this research shows that DG is negatively significant. It means that for each increase in one unit of DG, it will cause the decrease amount of PER by 0.356, which is hold by other variables constant. This result is not consistent with what Constand, Freitas and Sullivan (1991) stated that DG is positively significant related to the amount of PER. It might be because existed the dividend growth which is presented in Japanese firm shows a positive trend over the research period of 1979-1989, it means that their dividend growth indicate the increase amount of every year. In contrary, dividend growth which is presented in Indonesian firms shows a negative trend over the research

period of 1999-2003. It also might happen since Japanese and Indonesian firms have different policies in distributing the dividend.

Testing the **third hypothesis**, we analyze the coefficient of SD (β_3). The table shows that the amount of β_3 is -0.192. It means that SD is negatively affect the amount of PER, therefore according to hypothesis formulation and table 3.1, Ho is rejected. This result lead to a conclusion that there is sufficient evidences to prove SD (risk) is negatively affect the amount of PER. And it means that for each increase in one unit of SD will cause the decrease amount of PER by 0.192, which are hold by other variables constant. This result are consistent with the statements of Constand, Freitas and Sullivan (1991), Whitebeck and Khisor (1963) and C. Ambar Puji Hartanto and Suwarto (2003) in which they stated that SD is negatively affect the amount of PER.

Testing the **fourth hypothesis**, we analyze the coefficient of DPO (β_4). The table shows that the amount of β_4 is 0.346. It means that DPO is positively affect the amount of PER, therefore according to the hypothesis formulation and table 3.1, Ho is rejected. This result lead to a conclusion that there is sufficient evidences to prove DPO which is positively affect the amount of PER. And it means that for each increase in one unit of DPO, it will cause the increase amount of PER by 0.346, holding other variables constant. This result is consistent with what Whitebeck and Khisor (1963) and Jones (2000) explained that DPO is positively affect the amount of PER.

Testing the **fifth hypothesis**, we analyze the coefficient of CORP (β_5). The table shows that the amount of β_5 is 0.228. It means that CORP is positively affect the amount of PER, therefore according to hypothesis formulation and the table 3.1, Ho is rejected. This result lead to a conclusion that there is sufficient evidences to prove that CORP is positively affect the amount of PER. It also means for each increase in one unit of CORP will cause the increasing amount of PER by 0.228, holding other variables constant. This result is consistent with what Constand, Freitas and Sullivan (1991) stated that ownership structure held by corporations (CORP) positively affect the amount of PER.

Testing the **sixth hypothesis**, we analyze the coefficient of INDV (β_6). The table shows that the amount of β_6 is 0.001. It means that INDV is positively affect the amount of PER, therefore according to hypothesis formulation and table 3.1, Ho is rejected. This result lead to a conclusion that there is sufficient evidence to prove INDV is positively affect the amount of PER. And it means that for each increase in one unit of INDV will cause the increasing amount of PER by 0.001, holding by other variables constant. This result is consistent with the statement of Constand, Freitas and Sullivan (1991) that the ownership structure held by individual (INDV) positively affect the amount of PER.

Testing the **seventh hypothesis**, we analyze the coefficient of FOR (β_7). The table shows that the amount of β_7 is 0.442. It means that FOR is positively affect the amount of PER, therefore according to the hypothesis formulation and table 3.1, Ho

is fail to reject. Even FOR is significantly related to the amount of PER, but this research shows that FOR is positively significant to PER. It means that for each increase in one unit of FOR, it will cause the increasing amount of PER by 0.442, holding by other variables constant. This result is not consistent with what Constand, Freitas and Sullivan (1991) said that the ownership structure held by foreign investor (FOR) is negatively affect the amount of PER. It might because Japanese and Indonesian firms have different rules and treatments on foreign ownership.

4.2.2.2. The 1-7 Hypothesis refers to the equation of 3.2 are to find the effect of Earnings Growth, Dividends Growth, Risk, Dividend Payout Ratio, Ownership Structure Held By Corporations, Ownership Structure Held By Individual and Ownership Structure Held By Foreign Investor on the amount of Market Value.

After arranging all of the data available for this test and arranging into one basket (since this research use pooled cross section method), the test for the first until seven hypotheses refer to the equation of 3.2 by identifying the coefficient (slope or β_i) of EG, DG, SD, DPO, CORP, INDV and FOR on MV. By using the multiple regression method, the coefficient (slope or β_i) and ρ-value results of the second linear regression for each independent variable are described below:

TABLE 4.3
RESULT OF THE LINEAR REGRESSION TEST EQUATION 3.2

Independent Variables	β_i	t-Statistics	p-value of t	Significance level
EG	**0.018**	**0.326**	**0.745**	**Not Significant**
DG	**0.032**	**0.755**	**0.452**	**Not Significant**
SD	**0.098**	**1.564**	**0.120**	**Not Significant**
DPO	**-0.019**	**-0.820**	**0.414**	**Not Significant**
CORP	**0.286**	**1.198**	**0.233**	**Not Significant**
INDV	**0.012**	**0.821**	**0.414**	**Not Significant**
FOR	**0.129**	**2.061**	**0.041**	**Significant**

Table 4.3 shows the coefficient (slope or β_i) and p-value result and that only FOR variable is significant to the amount of MV. For EG, DG, SD, DPO, CORP and INDV shows that there is not significant.

Testing the **first hypothesis**, we analyze the coefficient of EG (β_1). The table shows that the amount of β_1 is 0.018. It means that EG is positively affect the amount of MV, therefore according to hypothesis formulation and table 3.1, Ho is fail rejected. And it means that for each increase in one unit of EG will cause the increasing amount of MV by 0.018, holding other variables constant. This result is not consistent with the statement of Constand, Freitas and Sullivan (1991) where they stated that earnings growth is negatively affect the amount of MV. It might because in Japan the firms that indicated the increase amount of earnings growth face the low market value, Indonesia, in other hand, the increasing of earnings growth indicates

that the firm is in a good performance in which it might lead a good condition also in the price of market share therefore it would create the increase amount of MV.

Testing the **second hypothesis**, we analyze the coefficient of DG (β_2). The table shows that the amount of β_2 is 0.032. It means that DG is positively affecting the amount of MV, therefore according to hypothesis formulation and table 3.1, Ho is rejected. This result lead to a conclusion that there is a sufficient evidence to prove that DG is positively affects the amount of MV. Has a meaning that for each increase in one unit of DG, it will cause the increasing amount of MV by 0.032, holding other variables constant. This result is consistent with what Constand, Freitas and Sullivan (1991) explained that the dividend growth is positively affecting the amount of MV.

Testing the **third hypothesis**, we analyze the coefficient of SD (β_3). The table shows that the amount of β_3 is 0.098. It means that SD is positively affecting the amount of MV, therefore according to hypothesis formulation and table 3.1, Ho is fail to reject. It could be said that for each increase in one unit of SD, it will caused the increase amount of MV by 0.098, holding other variables constant. This result is not consistent with the theory of Constand, Freitas and Sullivan (1991) in which they pointed out that risk is negatively affecting the amount of MV. It might because in Indonesia, some investors feel that the company with the big risk is having the higher price of market share, therefore to pursue their capital gains aim, they must give positive signs to those company.

Testing the **fourth hypothesis**, we analyze the coefficient of DPO (β_4). The table shows that the amount of β_4 is -0.019. It means that DPO is negatively affecting the amount of MV, therefore according to the hypothesis formulation and table 3.1, Ho is rejected. This result come to a conclusion that there is a sufficient evidence to prove that DPO is negatively affects the amount of MV. And it means that for each increase in one unit of DPO, it will cause the decrease amount of MV by 0.019, holding other variables constant. This result is consistent with the statement of Constand, Freitas and Sullivan (1991) that DPO is negatively affecting the amount of MV.

Testing the **fifth hypothesis**, we analyze the coefficient of CORP (β_5). The table shows that the amount of β_5 is 0.286. It means that CORP is positively affecting the amount of MV, therefore according to hypothesis formulation and table 3.1, Ho is rejected. This result lead to a conclusion that there is a sufficient evidence to prove that CORP is positively affects the amount of MV. And it means for each increase in one unit of CORP that it will cause the increase amount of MV by 0.286, holding other variables constant. This result is consistent with Constand, Freitas and Sullivan (1991) who stated that ownership structure held by corporations (CORP) positively affects the amount of MV.

Testing the **sixth hypothesis,** we analyze the coefficient of INDV (β_6). The table shows that the amount of β_6 is 0.012. It means that INDV is positively affect the amount of PER, therefore according to hypothesis formulation and table 3.1, Ho

TABLE 4.4
THE RESULT OF MULTICOLLINEARITY TESTING

Variables	Collinearity Statistics for Equation 3.1		Collinearity Statistics for Equation 3.2	
	Tolerance	VIF	Tolerance	VIF
EG	.826	1.211	.714	1.400
DG	.667	1.499	.494	2.026
SD	.918	1.090	.903	1.107
DPO	.577	1.734	.401	2.492
CORP	.949	1.053	.852	1.174
INDV	.986	1.014	.957	1.045
FOR	.954	1.048	.879	1.138

Table 4.4 shows that all of VIF is lower than 10 for both equations, meaning that the Multicollinearity among independent variables does not exist.

b. Heterocedasticity Testing

The detection of the presence of heteroscedasticity in this research is conducted by analyzing Scatterplot graphic from the regression analysis. As it can be seen in Scatter plot graphic in figure 1 and figure 2, the dots spread randomly and do not form any clear patterns. It can be concluded that the result of this test shows that heterocedasticity does not exist. This result proves that the data was valid and it will give a reliable estimated model parameter.

c. Outlier Testing

Outlier test in this research is done by using cook's distance value of 0.01. If the result is lower than 0.01, the data is free from bias; if it is not, the data is not free from the outlier. The result of the outlier testing was lower than 0.01, therefore, it proved that the outlier did not exist.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1. Research Conclusions

Based on the research purpose, the statistical test and analysis that have been described in the earlier chapters, some conclusions are drawn as follows:

a. This research has been done in the period of 1999-2003 with the total samples of 187 companies that were listed in the Jakarta stock exchange. Based on the result of the analysis, it can be concluded that there were sufficient evidence to prove hypotheses 3, 4, 5, and 6 refer to the equation 3.1, in which it states that risk negatively affects the amount of P/E ratio. Dividend payout ratios, ownership structure held by the corporation and ownership structure held by the individual positively affect the amount of P/E ratio. This research also concludes that there is no sufficient evidence to prove hypotheses 1, 2, and 7 refer to the equation 3.1, stated that the earnings growth positively affect the mount of P/E ratio, dividend growth positively affect the amount of P/E ratio and ownership structure held by foreign investors negatively affects the amount of P/E ratio. It could not give sufficient evidence because the growth on earnings and dividend in Indonesia for the period of 1999-2003 showed that there is a negative trend and conversely, for ownership structure held by foreign investor, it shows a positive trend.

b. This research also concludes that there is a sufficient evidence to prove hypothesis 2, 4, 5, and 7 refer to the equation 3.2, states that dividend growth positively affect the amount of MV, dividend payout ratio negatively affect the amount of MV, ownership structure held by corporation positively affect the amount of MV and ownership structure held by foreign investor positively affect the amount of MV. This research also concludes that there is no sufficient evidence to prove the hypotheses 1, 3, and 6, that states that earnings growth negatively affect the amount of MV, risk negatively affect the amount of MV and ownership structure held by individual negatively affect the amount of MV. This condition happens because in Indonesia the increasing earnings of growth indicates that the firms are in good performances that might lead to a good condition especially in the price of market share, therefore it would create the increase amount of MV. For the risk, it happens because in Indonesia, some investors feel that the company with the big risk have the higher price of market share, therefore to pursue their capital gains aims, they give positive signs to those companies. For the ownership structure held by individual, it exists because the increase of individual ownership structure indicates that the firms trusts and shows a good performance therefore public and individuals are willing to invest more in those firms.

c. Based on the research problems, this research proved that EG, DG, SD, DPO, CORP, INDV, and FOR variables are simultaneously show significant influence to the P/E ratio, but only EG, DG, DPO and FOR variables that are

managerial ownership, institutional ownership, foreign ownership and insider ownership. Therefore, if the agency conflict happen, further researchers could describe more about the impact of the agency conflict on P/E ratio and market value conditions of a certain period.

Testing the **fourth hypothesis**, we analyze the coefficient of DPO (β_4). The table shows that the amount of β_4 is -0.019. It means that DPO is negatively affecting the amount of MV, therefore according to the hypothesis formulation and table 3.1, Ho is rejected. This result come to a conclusion that there is a sufficient evidence to prove that DPO is negatively affects the amount of MV. And it means that for each increase in one unit of DPO, it will cause the decrease amount of MV by 0.019, holding other variables constant. This result is consistent with the statement of Constand, Freitas and Sullivan (1991) that DPO is negatively affecting the amount of MV.

Testing the **fifth hypothesis**, we analyze the coefficient of CORP (β_5). The table shows that the amount of β_5 is 0.286. It means that CORP is positively affecting the amount of MV, therefore according to hypothesis formulation and table 3.1, Ho is rejected. This result lead to a conclusion that there is a sufficient evidence to prove that CORP is positively affects the amount of MV. And it means for each increase in one unit of CORP that it will cause the increase amount of MV by 0.286, holding other variables constant. This result is consistent with Constand, Freitas and Sullivan (1991) who stated that ownership structure held by corporations (CORP) positively affects the amount of MV.

Testing the **sixth hypothesis,** we analyze the coefficient of INDV (β_6). The table shows that the amount of β_6 is 0.012. It means that INDV is positively affect the amount of PER, therefore according to hypothesis formulation and table 3.1, Ho

is fail to reject. And it means that for each increase in one unit of INDV, it will cause the increase amount of MV by 0.012, holding other variables constant. This result is not consistent with the theory of Constand, Freitas and Sullivan (1991) that the ownership structure held by individual (INDV) negatively affects the amount of MV. It might be happened because in Indonesia, if individual ownership (share owned by public and individual investor) increase, it indicates that the firms trusts and shows a good performance, therefore public and individual are willing to invest more in those firms.

Testing the **seventh hypothesis**, we analyze the coefficient of FOR (β_7). The table shows that the amount of β_7 is 0.129. It means that FOR is positively affect the amount of MV, therefore according to hypothesis formulation and table 3.1, Ho is rejected. This result lead to a conclusion that there is a sufficient evident to prove FOR is positively affect the amount of MV. And it could be said that for each increase in one unit of FOR will caused the increase amount of MV by 0.129, holding other variables constant. This result is in accordance with what Constand, Freitas and Sullivan (1991) stated that the ownership structure held by foreign investor is positively affecting the amount of MV.

According to the research problems and objectives, this research is to prove that earnings growth, dividend growth, risk, dividend payout and ownership structure affect the price earnings ratio and market values of Indonesian firms. Therefore, both price earnings ratio and market value could become the predictor of the future

earnings that later it can be used by investors to predict their investment's choices.

Based on the evidences from the previous analysis results, we can conclude that simultaneously, earnings growth, dividend growth, risk, dividend payout ratio, ownership structure that held by corporations, ownership structure that held by individual and ownership structure that held by foreign investors proved a significant effect to price earnings ratio of Indonesian firms. While independent variables that individually affect the price earnings ratio are earnings growth, dividend growth, dividend payout ratio and ownership structure that held by foreign investors.

The previous analysis results also proved that earnings growth, dividend growth, risk, dividend payout ratio, ownership structure that held by corporations, ownership structure that held by individual and ownership structure that held by foreign investors are simultaneously do not affect the market values of Indonesian firms. There is only the ownership structure held by foreign investors that individually shows significant affect to the market values of Indonesian firms.

All of the evidences and analyses results shows that the price earnings ratio can be used as a predictor for the future earnings and it would help the investors to predict which Indonesian company will be the best investment choice for them, since the common/fundamental variables (EG, DG and DPO) shows the significant influence to PER. In this research, we can not proved that market value is also the predictor of future earnings, since the common/fundamental variables (EG, DG and DPO) of company used in this research did not show the significant influence to MV and only one additional variable (ownership structure held by foreign investor) that

could show the significant influence to MV. This research also concludes that risk, ownership structure held by corporation and ownership structure held by individual do not affect the price earnings ratio of Indonesian firms. While earnings growth, dividend growth, dividend payout ratio, risk, ownership structure held by corporation and individual do not affect the market values of Indonesian firms.

4.2.3. Classical Assumption Test for Regression

The result of the classical assumption below will describe the validity of the data that are used for this research.

a. Multicollinearity Testing

The regression equation in this research has seven independent variables, for each multiple regression equation, the test of multicolinearity must be done. Multicollinearity testing among independent variables can be done with TOL and VIF tests. Multicollinearity test is based on VIF test which is shown in the table 4.4 below. The purpose of this test is to identify whether the independent variables are significantly correlate. Gujarati (1995) uses a *role of thumb* based on VIF and TOL and states that a variable would have a collinearity if its VIF is more than 10 and its TOL tends to be closed to 0 (zero). The result of multicollinearity testing for both equations 3.1 and 3.2 could be seen in the table 4.4:

TABLE 4.4
THE RESULT OF MULTICOLLINEARITY TESTING

Variables	Collinearity Statistics for Equation 3.1		Collinearity Statistics for Equation 3.2	
	Tolerance	VIF	Tolerance	VIF
EG	.826	1.211	.714	1.400
DG	.667	1.499	.494	2.026
SD	.918	1.090	.903	1.107
DPO	.577	1.734	.401	2.492
CORP	.949	1.053	.852	1.174
INDV	.986	1.014	.957	1.045
FOR	.954	1.048	.879	1.138

Table 4.4 shows that all of VIF is lower than 10 for both equations, meaning that the Multicollinearity among independent variables does not exist.

b. Heterocedasticity Testing

The detection of the presence of heteroscedasticity in this research is conducted by analyzing Scatterplot graphic from the regression analysis. As it can be seen in Scatter plot graphic in figure 1 and figure 2, the dots spread randomly and do not form any clear patterns. It can be concluded that the result of this test shows that heterocedasticity does not exist. This result proves that the data was valid and it will give a reliable estimated model parameter.

c. Outlier Testing

Outlier test in this research is done by using cook's distance value of 0.01. If the result is lower than 0.01, the data is free from bias; if it is not, the data is not free from the outlier. The result of the outlier testing was lower than 0.01, therefore, it proved that the outlier did not exist.

4.3. Research Implication

The analysis result of equation 3.1 shows that EG, DG, DPO and FOR variables is significant to the amount of PER. This can be seen by the significant ρ-value result when all variables are regressed by price earning ratio. This research implies that price earning ratio in Indonesian firms over period 1999-2003 is significantly affected by EG, DG, DPO and FOR. With the coefficient signs -, -, + and +. And SD, CORP and INDV variables are not significantly affected the price earnings ratio. With the coefficient signs -, + and +. This evidence implies that the company fundamental factors still become the best way to predict the amount of PER, there is only one additional variable, FOR, that can significantly predict the amount of PER. This result is in conformity with Husnan (1998), who said that company fundamental factors which affect PER are dividend payout ratio, earnings growth and dividend growth.

The analysis result of equation 3.2 shows that only FOR variable is significant to the amount of MV with the coefficient sign is +. The rest variables EG, DG, SD, DPO, CORP and INDV are not significantly affecting the amount of MV with the coefficient signs +, +, +, -, + and +. This evidence implies that all the company fundamental factors and two additional factors can not significantly predict the amount of MV. Only one additional factor, FOR, is significantly affecting the amount of MV. This analysis leads to a conclusion that the performance of Indonesian firms is indicated by market values in which it only can be predicted by the foreign investor's ownership. It means that every changes of foreign investor's ownership

will affect the amount of market value significantly. If investor used the MV analysis to choose which firms would offer best return, they must analyze through the foreign investor ownership held in those firms. Indonesian firms usually have higher foreign ownership which offer higher returns (high price of share) simultaneously paid higher dividend. And all types of investors always have positive signs to those firms over period 1999-2003. These analysis results are in accordance with Constand, Freitas and Sullivan (1991) where they stated that ownership structure held by foreign investor is positively affect the amount of MV. We also might conclude that Japanese and Indonesian foreign investors have the same positive views about the market value over period 1979-1989 for Japanese firm and 1999-2003 for Indonesian firms. This result analysis can be a potential contribution to conduct further researches to broaden our knowledge in this area.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1. Research Conclusions

Based on the research purpose, the statistical test and analysis that have been described in the earlier chapters, some conclusions are drawn as follows:

a. This research has been done in the period of 1999-2003 with the total samples of 187 companies that were listed in the Jakarta stock exchange. Based on the result of the analysis, it can be concluded that there were sufficient evidence to prove hypotheses 3, 4, 5, and 6 refer to the equation 3.1, in which it states that risk negatively affects the amount of P/E ratio. Dividend payout ratios, ownership structure held by the corporation and ownership structure held by the individual positively affect the amount of P/E ratio. This research also concludes that there is no sufficient evidence to prove hypotheses 1, 2, and 7 refer to the equation 3.1, stated that the earnings growth positively affect the mount of P/E ratio, dividend growth positively affect the amount of P/E ratio and ownership structure held by foreign investors negatively affects the amount of P/E ratio. It could not give sufficient evidence because the growth on earnings and dividend in Indonesia for the period of 1999-2003 showed that there is a negative trend and conversely, for ownership structure held by foreign investor, it shows a positive trend.

b. This research also concludes that there is a sufficient evidence to prove hypothesis 2, 4, 5, and 7 refer to the equation 3.2, states that dividend growth positively affect the amount of MV, dividend payout ratio negatively affect the amount of MV, ownership structure held by corporation positively affect the amount of MV and ownership structure held by foreign investor positively affect the amount of MV. This research also concludes that there is no sufficient evidence to prove the hypotheses 1, 3, and 6, that states that earnings growth negatively affect the amount of MV, risk negatively affect the amount of MV and ownership structure held by individual negatively affect the amount of MV. This condition happens because in Indonesia the increasing earnings of growth indicates that the firms are in good performances that might lead to a good condition especially in the price of market share, therefore it would create the increase amount of MV. For the risk, it happens because in Indonesia, some investors feel that the company with the big risk have the higher price of market share, therefore to pursue their capital gains aims, they give positive signs to those companies. For the ownership structure held by individual, it exists because the increase of individual ownership structure indicates that the firms trusts and shows a good performance therefore public and individuals are willing to invest more in those firms.

c. Based on the research problems, this research proved that EG, DG, SD, DPO, CORP, INDV, and FOR variables are simultaneously show significant influence to the P/E ratio, but only EG, DG, DPO and FOR variables that are

individually show significant influence. The other evidence is EG, DG, SD, DPO, CORP, INDV, and FOR variables are simultaneously show no significant influence to the MV. And only FOR variable that is individually shows a significant influence to MV. This result lead a conclusion that investor is better use price earnings ratio to help them in making decision on investment and also they can used PER as a predictor of future earnings than MV. Therefore, all information about PER will be a beneficial information for them in the conduct trades. This result also a beneficial information for the companies that still not have a better PER, so in the future they can improve their PER condition, and it can attract more investor to invest to their firms.

5.2. Research Recommendations

After completion this research, the following recommendations have been drawn as follow:

1. The period of research consideration for the same research hopefully can be conducted over a longer period, such as 10 years as what Constand, Freitas and Sullivan (1991) had done in Japanese firms. The periods of 10 years is recommended in order to show the more significant results.
2. For further researches, it is suggested to observe the other fundamental and additional variables that affect the price earnings ratio and market value in Indonesian firms.
3. The categorized of ownership structure hopefully for the same research can be conducted to the common categorize that are used in Indonesian firms, such as

managerial ownership, institutional ownership, foreign ownership and insider ownership. Therefore, if the agency conflict happen, further researchers could describe more about the impact of the agency conflict on P/E ratio and market value conditions of a certain period.

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Appendix 1.1 ORIGINAL DATA YEAR 1998

No	CODE	COMPANY YEAR 1998	PER	MV	EPS	DPS	RISK	DPO	Ownership Structure		
									CORP	INDV	FOR
1	AALI	PT Astra Agro Lestari Tbk.	13.91	3050650	174	37	0.00398	0.212643678	83.68	13.17	3.15
2	ANTM	PT Aneka Tambang (Persero) Tbk.	6.68	1999999.68	260	11.59	0.00226	0.044576923	65	22.7	12.3
3	BRNA	PT Berlina Co. Ltd. Tbk.	3.51	20700	88	35	0.00457	0.397727273	51.4	48.6	6.2
4	CNTX	PT Century Textile Industry (Centex) Tbk.	0.51	10937.5	6485	300	0.00316	0.046260601	10	35	55
5	DPNS	PT Duta Pertiwi Nusantara Tbk.	0.55	40367.25	421	55	0.01451	0.13064133	49.67	35.33	15
6	GGRM	PT Gudang Garam Tbk.	20.67	22415625.2	577	120	0.00424	0.20797227	79.98	7.42	12.6
7	HITS	PT. Humpuss Intermoda Transportasi Tbk	2.1	157500	167	20	0.00949	0.119760479	83.55	13.75	2.7
8	INCI	PT Intan Wijaya Chemical Industry Tbk.	1.26	50600	194	200	0.00434	1.030927835	67.17	22.63	10.2
9	ISAT	PT. Indonesian Satelite Coorporation (Per	9.45	10795087.5	1124	167.5	0.00456	0.149021352	65	1	34
10	KICI	PT Kedaung Indah Can Tbk.	2.59	62100	173	27.5	0.00636	0.158959538	41.57	24.36	34.07
11	LTLS	PT Lautan Luas Tbk.	18.27	300000	621	25	0.00192	0.040257649	63.03	8.97	28
12	MERK	PT. Merck Indonesia Tbk.	15.69	31920	1211	50	0.00207	0.041288192	12.81	5.24	81.95
13	MRAT	PT. Mustika Ratu Tbk.	4	101650	233	64	0.00379	0.274678112	70.93	0.52	28.5
14	RALS	PT. Ramayana Lestari Sentosa Tbk.	14.29	1347500	136	50	0.00623	0.367647059	60.64	23.66	15.7
15	RDTX	PT Roda Vivatex Tbk.	6	255360	165	40	0.00196	0.242424242	67.54	21.56	10.9
16	RIGS	PT. Rig Tenders Indonesia Tbk.	0.72	82232.55	1873	67	0.00285	0.03577149	10.04	39.35	50.61
17	SIIP	PT. Surya Inti Permata Tbk.	18.06	150000	14	73.85	0.01217	5.275	83.33	16.57	0.1
18	SMGR	PT Semen Gresik (Persero) Tbk.	22.22	4923161.6	450	156.82	0.00401	0.348488889	51	29	20
19	SMSM	PT. Selamat Sempurna Tbk.	2.73	157414.4	293	51	0.00653	0.174061433	68.02	27.68	4.3
20	SSTM	PT Sunson Textile Manufacturer Tbk.	33.04	146423.73	22	12.5	0.00736	0.568181818	58	42	18.7
21	STTP	PT Siantar Top Tbk.	8.82	192375	249	60	0.00229	0.240963855	64.35	30.2	5.45
22	TCID	PT. Mandom Indonesia Tbk. (Tancho Indo	5.02	117000	301	50	0.00296	0.166112957	10.56	36.41	53.03
23	TGKA	PT.Tiga Raksa Satria Tbk.	0.47	96223.05	2320	700	0.00398	0.301724138	89.94	5.64	4.42
24	TINS	PT Tambang Timah (Persero) Tbk.	5.21	2705248.3	1031	141.26	0.00234	0.137012609	65	2.5	32.5
25	TLKM	PT. Telekomunikasi Indonesia(Persero) T	21.56	25199999.1	125	48.5	0.00358	0.388	65	13.5	21.5

Appendix 1.2 ORIGINAL DATA YEAR 1999

No	CODE	COMPANY YEAR 1999	PER	MV	EPS	DPS	RISK	DPO	Ownership stucture		
									CORP	INDV	FOR
1	AALI	PT Astra Agro Lestari Tbk.	17.03	2943720	115	25	0.00135	0.217391304	76.95	23.05	8.4
2	AMFG	PT Asahimas Flat Glass Co. Ltd. Tbk.	18.21	330050	63	8	0.00234	0.126984127	4049	19.82	39.69
3	ANTM	PT Aneka Tambang (Persero) Tbk.	7.35	1723076.6	190	53.87	0.00073	0.283526316	65	35	15.3
4	AQUA	PT Aqua Golden Mississippi Tbk.	5.9	105299.78	1356	300	0.00131	0.221238938	75.17	24.83	21.8
5	BGMT	PT Siloam Health Care Tbk. (Baligraha Medikatama)	68.53	208107.1	16	18	0.00223	1.125	77.29	22.71	2.4
6	BRNA	PT Berlina Co. Ltd. Tbk.	4.43	93150	305	20	0.00986	0.06557377	51.4	48.6	12.4
7	CNTX	PT Century Textile Industry (Centex) Tbk.	3.39	26250	470	400	0.00214	0.85106383	10	35	55
8	DPNS	PT Duta Pertiwi Nusantara Tbk.	5.5	146936.79	255	100	0.00265	0.392156863	49.67	43.94	6.39
9	DSUC	PT Daya Sakti Unggul Corporation Tbk.	9.37	312500	67	45	0.00271	0.671641791	59.39	4061	31.7
10	EKAD	PT Ekadharma Tape Industries Tbk.	4.06	50311.8	277	350	0.00249	1.263537906	72.8	27.2	6.4
11	ERTX	PT Eratex Djaja Ltd. Tbk.	5.86	41750.3	145	50	0.0019	0.344827586	18.5	25.6	55.9
12	GGRM	PT Gudang Garam Tbk.	14.14	36172854.4	1183	260	0.00125	0.21978022	78.14	21.86	13.8
13	HITS	PT. Humpuss Intermoda Transportasi Tbk.	33.37	371250	25	50	0.00344	2	83.55	16.45	2.8
14	IGAR	PT Igar Jaya Tbk.	1.09	315000	275	107	0.01298	0.389090909	51.1	48.9	33
15	INAI	PT Indal Aluminium Industry Tbk .	6.56	99000	95	20	0.00424	0.210526316	65.85	34.15	22.7
16	INCI	PT Intan Wijaya Chemical Industry Tbk.	5.6	111320	197	75	0.00226	0.38071066	68.73	31.27	18.5
17	ISAT	PT. Indonesian Satelite Coorporation (Persero)	10.13	16153800	1540	425.08	0.00111	0.276025974	65	35	34.4
18	KICI	PT Kedaung Indah Can Tbk.	19.67	338625	51	100	0.00266	1.960784314	42.25	23.64	34.11
19	LTLS	PT Lautan Luas Tbk.	24.74	643500	33	33	0.00186	1	63.03	36.97	9.8
20	MERK	PT. Merck Indonesia Tbk.	7.5	142758	1029	200	0.0026	0.19436346	12.66	6.3	81.04
21	MRAT	PT. Mustika Ratu Tbk.	11.68	214000	197	80	0.00324	0.406091371	7093	18.1	10.97
22	PLIN	PT Plaza Indonesia Realty Tbk.	56.17	569250	29	10	0	0.344827586	66.07	19.13	14.8
23	PNSE	PT. Pujiadi & Sons Estate Tbk.	11.06	146569.5	93	125	0.00497	1.344086022	60	40	0.8
24	RALS	PT. Ramayana Lestari Sentosa Tbk.	39.57	4130000	149	40	0.00198	0.268456376	61.11	38.9	16.2
25	RDTX	PT Roda Vivatex Tbk.	15.53	342720	92	80	0.00123	0.869565217	73.33	26.67	10.7
26	RIGS	PT. Rig Tenders Indonesia Tbk.	4.09	167510.75	783	260	0.00136	0.332056194	10.03	32.79	57.18
27	SIIP	PT. Surya Inti Permata Tbk.	194.1	225000	2	2.76	0.01018	1.38	78.21	21.79	35.4

28	SMGR	PT Semen Gresik (Persero) Tbk.	27.3	6569158.4	406	135.06	0.00131	0.332660099	51.01	23.46	25.53
29	SMSM	PT. Selamat Sempurna Tbk.	7.24	292200.48	155	132	0.00201	0.851612903	68.02	31.98	3.9
30	SONA	PT. Sona Topas Tourism Industry Tbk.	7.22	136620	114	50	0.00643	0.438596491	39.13	44.38	5.82
31	SSTM	PT Sunson Textile Manufacturer Tbk.	12.47	502024.2	48	8	0.00415	0.166666667	57.37	42.63	30.9
32	STTP	PT Siantar Top Tbk.	12.82	375250	308	85	0.00044	0.275974026	64.05	30.53	5.42
33	TCID	PT. Mandom Indonesia Tbk. (Tancho Indonesia	8.62	390000	580	150	0.00204	0.25862069	10.56	38.41	51.03
34	TGKA	PT.Tiga Raksa Satria Tbk.	10.08	349902	347	100	0.00406	0.288184438	92.25	3.33	4.42
35	TINS	PT Tambang Timah (Persero) Tbk.	7.71	2453597.25	632	409.08	0.00124	0.647278481	65	35	32.4
36	TLKM	PT. Telekomunikasi Indonesia(Persero) Tbk.	18.44	40067998.57	216	50.99	0.00139	0.236064815	66.19	33.81	22.4
37	TOTO	PT Surya Toto Indonesia Tbk.	72.85	159697.97	74	200	0.00087	2.702702703	56.8	9.4	33.8
38	TSPC	PT. Tempo Scan Pacific Tbk.	29.71	2655000	199	25	0.00333	0.125628141	66.11	33.89	21.6

Appendix 1.3 ORIGINAL DATA YEAR 2000

No	CODE	COMPANY YEAR 2000	PER	MV	EPS	DPS	RISK	DPO	Ownership Structure		
									CORP	INDV	FOR
1	AALI	PT Astra Agro Lestari Tbk.	20.92	1471860	47	45	0.00058	0.95744681	78.93	13.48	7.59
2	ALMI	PT Alumindo Light Metal Industry Tbk.	92.89	284900	9	100	0.00247	11.1111111	77.9	11.3	10.8
3	ANTM	PT Aneka Tambang (Persero) Tbk.	2.89	561611	311	79.19	0.0005	0.25463023	65	19.42	15.58
4	AQUA	PT Aqua Golden Mississippi Tbk.	4.79	184275	2922	400	0.00132	0.13689254	75.3	2.01	22.69
5	ASGR	PT Astra Graphia Tbk.	32.59	548887.5	13	1	0.00305	0.07692308	79.07	18.84	2.09
6	BASS	PT Bahtera Adimina Samudra Tbk.	24.52	989464	24	25	0.00499	1.04166667	70.98	19.64	9.38
7	BATI	PT BAT Indonesia Tbk.	13.9	798600	871	250	0.00332	0.28702641	71	15	8
8	BGMT	PT Siloam Health Care Tbk. (Baligraha Medikatama)	32.59	286781.04	13	13	0.00222	1	6.09	76.68	17.23
9	BLTA	PT. Berlian Laju Tankers Tbk.	19.37	493044.73	55	10	0.00057	0.18181818	51.45	30.25	18.3
10	BRNA	PT Berlina Co. Ltd. Tbk.	3	74175	341	100	0.0008	0.29325513	51.4	35.9	12.7
11	BYSB	PT. Bayer Indonesia Tbk.	4.4	41368.98	976	100	0.00071	0.10245902	3.95	8.97	87.08
12	CKRA	PT Ciptojaya Kontrindo Reksa Tbk.	50.63	23520	3	2	0.00442	0.66666667	61.66	25.37	12.97
13	CMPP	PT. Centris Multi Persada Pratama Tbk.	13.2	32400	38	6	0.00252	0.15789474	62.96	28.58	8.46
14	CNTX	PT Century Textile Industry (Centex) Tbk.	3.39	19600	1915	400	0.00056	0.20887728	10	35.85	54.15
15	CPIN	PT Citra Tubindo Tbk.	1112.66	768000	9	50	0.00085	5.55555556	55.34	39.41	5.25
16	DLTA	PT Delta Djakarta Tbk.	3.45	118498	2148	350	0.00126	0.16294227	26	18	56
17	DNKD	PT. Dankos Laboratories Tbk.	10.78	491163.75	51	1	0.00109	0.01960784	71.46	16.86	11.68
18	DPNS	PT Duta Pertiwi Nusantara Tbk.	4.16	72418.85	138	50	0.00115	0.36231884	49.67	43.63	6.7
19	DYNA	PT Dynaplast Tbk.	7.63	224789.58	98	50	0.00071	0.51020408	40.14	44.49	15.34
20	EKAD	PT. Ekadharma Tape Industries Tbk.	5.14	31305.12	136	100	0.00218	0.73529412	72.8	18.21	8.99
21	ESTI	PT Ever Shine Textile Industry Tbk.	122.79	503802.18	2	50	0.00096	25	58.37	19.45	14.82
22	FAST	PT Fast Food Indonesia Tbk.	16.23	4239375	59	110	0.00041	1.86440678	80	3	10
23	GGRM	PT Gudang Garam Tbk.	11.15	25013144	1166	500	0.00077	0.42881647	74.12	11.65	14.23
24	HITS	PT. Humpuss Intermoda Transportasi Tbk.	0.55	270000	962	15	0.00331	0.01559252	63.85	16.44	19.71
25	HMSP	PT Hanjaya Mandala Sampoerna Tbk.	68.19	13827200	219	250	0.00084	1.14155251	31.09	27.36	41.55
26	INCI	PT Intan Wijaya Chemical Industry Tbk.	3.4	70840	198	50	0.00077	0.25252525	68.73	12.39	18.88
27	INDR	PT Indo-Rama Synthetics Tbk.	2.54	490763.78	295	1	0.00072	0.00338983	37.82	0.56	61.62

28	ISAT	PT. Indonesian Satelite Coorporation (Persero)	5.68	9319500	1586	333	0.00073	0.20996217	65	2.04	32.96
29	JRPT	PT Jaya Real Property Tbk.	18.53	270250	31	1	0.00159	0.03225806	68.07	17.88	14.05
30	KICI	PT Kedaung Indah Can Tbk.	3.36	69000	125	30	0.00287	0.24	42.25	23.64	34.11
31	KKGI	PT Kurnia Kapuas Utama Glue Industries Tbk.	11.42	127500	45	2.75	0.0016	0.06111111	11.02	67.79	31.19
32	KOMI	PT Komatsu Indonesia Tbk.	2.69	395199	381	104	0.00068	0.27296588	18.28	26.59	55.13
33	LTLS	PT Lautan Luas Tbk.	12.15	315900	33	18	0.00097	0.54545455	63.03	29.31	7.66
34	MPPA	PT. Matahari Putera Prima Tbk.	4.78	1352997	105	16.5	0.00112	0.15714286	6.89	7.62	85.49
35	MRAT	PT. Mustika Ratu Tbk.	4.59	144450	294	69	0.00331	0.23469388	70.93	19.62	9.45
36	PBRX	PT Pan Brothers Tex Tbk.	6.67	99840	195	35	0.00087	0.17948718	21	8.47	70.53
37	PRAS	PT Prima Alloy Steel Tbk.	5.97	28880	54	10	0.00263	0.18518519	79.94	14.81	5.25
38	PTRO	PT Petrosea Tbk.	4.33	153900	346	70	0.00085	0.20231214	57.54	25.55	31.99
39	RALS	PT. Ramayana Lestari Sentosa Tbk.	28.58	3675000	184	100	0.00105	0.54347826	65.5	17.42	17.08
40	RDTX	PT Roda Vivatex Tbk.	11.71	282240	90	35	0.00044	0.38888889	75.99	17.87	6.14
41	RIGS	PT. Rig Tenders Indonesia Tbk.	1.28	170556.4	2189	258	0.00097	0.11786204	10.03	32.79	57.18
42	RMBA	PT. Bentoel Internasional Investama Tbk.	6.78	897750	74	0.25	0.00767	0.00337838	8.59	80	11.41
43	SMDR	PT. Samudera Indonesia Tbk.	3.3	364304.13	621	122	0.0011	0.19645733	64.79	21.48	8.25
44	SMGR	PT Semen Gresik (Persero) Tbk.	10.04	3440281.6	578	162.24	0.00101	0.28069204	51.01	23.46	25.53
45	SMSM	PT. Selamat Sempurna Tbk.	8.8	519467.52	227	31	0.00072	0.13656388	68.02	26.84	5.14
46	SRSN	PT Sarasa Nugraha Tbk.	118.85	198000	8	1	0.00305	0.125	5.59	7.55	86.86
47	STTP	PT Siantar Top Tbk.	53.72	358150	27	110	0.00177	4.07407407	64.05	30.53	5.42
48	TBMS	PT Tembaga Mulia Semanan Tbk.	6.99	9090.9	386	70	0.00198	0.18134715	27.22	21.75	51.03
49	TCID	PT. Mandom Indonesia Tbk. (Tancho Indonesia	8.53	452400	340	400	0.00334	1.17647059	60.12	6.83	33.17
50	TGKA	PT.Tiga Raksa Satria Tbk.	16.49	262426.5	182	200	0.00052	1.0989011	93.89	4.7	1.41
51	TINS	PT Tambang Timah (Persero) Tbk.	2.09	692040	659	247.37	0.00087	0.37537178	65	5.14	29.86
52	TIRT	PT Tirta Mahakam Plywood Industry Tbk.	9.22	118560	21	6.25	0.00503	0.29761905	36.54	34.42	29.04
53	TLKM	PT. Telekomunikasi Indonesia(Persero) Tbk.	8.6	20663999.3	238	53.88	0.00065	0.22638655	77.79	0.22	21.99
54	TMPI	PT. Artha Graha Investama Sentral Tbk.	32.05	107599.8	7	1.5	0.00271	0.21428571	2.14	38.9	58.96
55	TSPC	PT. Tempo Scan Pacific Tbk.	3.98	1383750	773	50	0.00064	0.06468305	66.04	14.74	19.22
56	TURI	PT. Tunas Ridean Tbk.	16.53	313875	68	28	0.00112	0.41176471	47.9	22.1	30
57	ULTJ	PT Ultrajaya Milk Industry & Trading Company Tbk.	75.74	452513.18	16	15	0.00096	0.9375	26.11	63.55	10.34
58	UNIC	PT Unggul Indah Cahaya Tbk.	15.63	459997.64	77	1	0.0024	0.01298701	56.27	36.72	7.01

Appendix 1.4 ORIGINAL DATA YEAR 2001

No	CODE	COMPANY YEAR 2001	PER	MV	EPS	DPS	RISK	DPO	Ownership stucture		
									CORP	INDV	FOR
1	AALI	PT Astra Agro Lestari Tbk.	22.59	1396380	59	7	0.00277	0.118644068	74.1	16.25	9.65
2	ACAP	PT. Adhi Candra Automotive P Tbk.	96.61	1487400	19	20	0.00074	1.052631579	64.92	32.19	2.89
3	ALFA	PT. Alfa Retailindo Tbk.	12.38	327600	57	7	0.00059	0.122807018	78.21	16.21	5.58
4	ANTM	PT Aneka Tambang (Persero) Tbk.	2.75	984615.2	291	155.6	0.00086	0.534707904	65	18.56	16.44
5	AQUA	PT Aqua Golden Mississippi Tbk.	9.59	394874.19	3648	500	0.00124	0.137061404	75.35	9.01	15.64
6	BASS	PT Bahtera Adimina Samudra Tbk.	14.2	495808.35	21	3	0.00147	0.142857143	70.98	19.64	9.38
7	BLTA	PT. Berlian Laju Tankers Tbk.	32.28	910098.04	55	15	0.00045	0.272727273	46.01	37.63	16.36
8	BMTR	PT Bimantara Citra Tbk.	4.21	1449225	338	15	0.0012	0.044378698	55.46	30.66	13.88
9	BRNA	PT Berlina Co. Ltd. Tbk.	1.86	67275	526	150	0.00136	0.285171103	56.42	30.39	13.19
10	BYSB	PT. Bayer Indonesia Tbk.	12.57	33002.22	271	180	0.00127	0.664206642	3.95	8.97	87.08
11	CMPP	PT. Centris Multi Persada Pratama Tbk.	6.05	18900	50	15	0.00161	0.3	63	28.54	8.46
12	CNTX	PT Century Textile Industry (Centex) Tbk.	1.79	17500	2792	400	0.00106	0.143266476	22.79	11.06	66.15
13	DLTA	PT Delta Djakarta Tbk.	2.73	121700.18	2785	300	0.00008	0.107719928	26.3	15.4	58.3
14	DNKD	PT. Dankos Laboratories Tbk.	6.96	410791.5	66	20	0.00077	0.303030303	71.46	14.26	14.28
15	DPNS	PT Duta Pertiwi Nusantara Tbk.	4.67	48489.14	86	50	0.00104	0.581395349	50.67	36.41	12.92
16	DSFI	PT Dharma Samudra Fishing Industries Tbk.	168.42	235107.67	19	5.53	0.00355	0.291052632	68.51	26.72	4.77
17	EKAD	PT Ekadharma Tape Industries Tbk.	3.37	20124.72	134	75	0.00174	0.559701493	72.8	19.88	7.32
18	ERTX	PT Eratex Djaja Ltd. Tbk.	6.28	41259.12	67	25	0.00126	0.373134328	24.41	25.59	50
19	FAST	PT Fast Food Indonesia Tbk.	13.35	345843.75	58	11	0.00004	0.189655172	80	18.14	1.86
20	FMII	PT Fortune Mate Indonesia Tbk.	10.45	232000	67	20	0.00064	0.298507463	23.81	20.63	55.56
21	GGRM	PT Gudang Garam Tbk.	7.97	16643361	1085	500	0.00051	0.460829493	72.12	12.77	15.11
22	GMTD	PT Gowa Makassar Tourism Dev. Tbk.	7.12	40615.2	56	10	0.00241	0.178571429	65	28.11	6.89
23	HEXA	PT. Hexindo Adiperkasa Tbk.	2.72	58800	257	40	0.00191	0.155642023	8.15	14.66	77.19
24	HITS	PT. Humpuss Intermoda Transportasi Tbk.	1.44	303750	468	50	0.00188	0.106837607	63.85	16.44	19.71
25	HMSP	PT Hanjaya Mandala Sampoerna Tbk.	15.07	14400000	212	350	0.00326	1.650943396	32.06	59.17	8.77
26	IGAR	PT Igar Jaya Tbk.	8.5	68250	8	8	0.00186	1	51.13	16.43	32.44
27	INAF	PT Indofarma Tbk.	4.68	572921.88	40	12.46	0.00106	0.3115	80.73	18.55	0.72

28	INCI	PT Intan Wijaya Chemical Industry Tbk.	2.31	51232.5	175	50	0.00113	0.285714286	68.73	15.91	15.36
29	INTA	PT. Intraco Penta Tbk.	2.86	43500	88	9.67	0.00324	0.109886364	69.78	29.23	0.99
30	ISAT	PT. Indonesian Satelite Coorporation (Perser	6.74	9785475	1403	610.8	0.00058	0.435352815	65	0.3	34.7
31	KICI	PT Kedaung Indah Can Tbk.	4.76	41400	63	50	0.00178	0.793650794	42.25	23.65	34.1
32	KOMI	PT Komatsu Indonesia Tbk.	5.62	318087	147	104	0.00082	0.707482993	18.28	19.51	62.21
33	LTLS	PT Lautan Luas Tbk.	3.82	187200	63	7	0.00055	0.111111111	63.33	28.66	8.01
34	MEDC	PT Medco Energi Corporation Tbk.	6.69	4998677.2	224	85	0.00116	0.379464286	2.5	12.06	85.44
35	MPPA	PT. Matahari Putera Prima Tbk.	11.62	1177107.4	37	31	0.00085	0.837837838	8.45	2.74	88.81
36	MRAT	PT. Mustika Ratu Tbk.	3.68	133750	340	150	0.00198	0.441176471	70.93	19.62	9.45
37	PBRX	PT Pan Brothers Tex Tbk.	4.03	72960	136	35	0.00244	0.257352941	21	8.47	70.53
38	PICO	PT Pelangi Indah Canindo Tbk.	11.2	14227.5	9	2	0.00298	0.222222222	78.83	7.33	13.84
39	PTRO	PT Petrosea Tbk.	1.35	159030	1145	100	0.00147	0.087336245	48.49	19.54	31.97
40	RALS	PT. Ramayana Lestari Sentosa Tbk.	11.7	3745000	229	75	0.00133	0.327510917	65.5	25.33	9.17
41	RDTX	PT Roda Vivatex Tbk.	45.63	315840	26	17.5	0.00064	0.673076923	79.07	10.27	10.66
42	RIGS	PT. Rig Tenders Indonesia Tbk.	1.79	184261.83	1694	500	0.00046	0.295159386	10.03	29.53	60.44
43	RIMO	PT Rimo Catur Lestari Tbk.	9.35	51000	16	5	0.00117	0.3125	72.78	24.14	3.08
44	SCCO	PT Supreme Cable Manufacturing Corporation (Sucaco) Tbk.	15.25	205583.4	66	80	0.0007	1.212121212	45.72	42.47	11.81
45	SIMM	PT Surya Intrindo Makmur Tbk.	138.24	550000	5	60	0.00314	12	68.6	31.39	0.01
46	SMDR	PT. Samudera Indonesia Tbk.	5.47	497586.14	512	122	0.00231	0.23828125	65.79	21.45	8.52
47	SMGR	PT Semen Gresik (Persero) Tbk.	10.28	3262336	535	231.14	0.00125	0.432037383	51.01	23.46	25.53
48	SMPL	PT Summitplast Interbenua Tbk.	19.34	171.175	11	35	0.0067	3.181818182	49.9	25.15	24.95
49	SMRA	PT Summarecon Agung Tbk.	0.48	102192.48	628	25	0.00281	0.039808917	39.93	60.07	5.71
50	SMSM	PT. Selamat Sempurna Tbk.	8.56	474014.11	210	57	0.00061	0.271428571	68.02	26.7	5.28
51	TBMS	PT Tembaga Mulia Semanan Tbk.	3.79	73468	1056	80	0.00118	0.075757576	32.67	16.3	51.03
52	TCID	PT. Mandom Indonesia Tbk. (Tancho Indones	700	327600	300	150	0.00044	0.5	7.91	31.97	60.12
53	TGKA	PT.Tiga Raksa Satria Tbk.	7.69	349902	520	250	0.00042	0.480769231	93.89	4.7	1.41
54	TINS	PT Tambang Timah (Persero) Tbk.	5.88	216419.86	73	237.86	0.00315	3.258356164	65	1.91	33.09
55	TIRT	PT Tirta Mahakam Plywood Industry Tbk.	8.92	1312500	17	6.25	0.00105	0.367647059	35.74	35.22	29.04
56	TLKM	PT. Telekomunikasi Indonesia(Persero) Tbk.	7.59	32255999	422	88.16	0.0009	0.208909953	54.29	11.05	34.66
57	TRPK	PT Multi Agro Persada Tbk. (Trafindo Perkasa)	2.03	10518.75	220	25	0.00153	0.113636364	50	24.5	25.5
58	TSPC	PT. Tempo Scan Pacific Tbk.	4.61	1462500	704	150	0.00055	0.213068182	66.06	25.6	8.34
59	TURI	PT. Tunas Ridean Tbk.	3.95	313875	57	55	0.00359	0.964912281	47.9	11.07	30

Appendix 1.5 ORIGINAL DATA YEAR 2002

No	CODE	COMPANY YEAR 2002	PER	MV	EPS	DPS	RISK	DPO	Ownership Structure		
									CORP	INDV	FOR
1	AALI	PT Astra Agro Lestari Tbk.	10.31	2366853	150	10	0.00143	0.06666667	66.84	18.9	14.26
2	ACAP	PT. Adhi Candra Automotive P Tbk.	31.18	361800	14	18	0.00265	1.28571429	64.93	34.41	0.66
3	ALFA	PT. Alfa Retailindo Tbk.	11.86	362700	65	9	0.00126	0.13846154	80	14.2	5.8
4	AMFG	PT Asahimas Flat Glass Co. Ltd. Tbk.	2.78	575050	476	44	0.00124	0.09243697	40.49	38.36	21.15
5	ANTA	PT Anta Express Tour & Travel Service Tbk.	37.58	85500	4	3	0.00222	0.75	85.96	9.85	4.19
6	ANTM	PT Aneka Tambang (Persero) Tbk.	5.67	1144615	106	93.87	0.00223	0.88556604	65	23.84	11.16
7	AQUA	PT Aqua Golden Mississippi Tbk.	7.47	493593	5023	625	0.00063	0.12442763	68.72	9.01	22.72
8	ARNA	PT Arwana Citramulia Tbk.	6.04	90560	17	5	0.00085	0.29411765	41.06	34.31	24.63
9	AUTO	PT. Astra Otoparts Tbk.	4.08	1049902	343	65	0.0008	0.18950437	87.31	0.51	12.18
10	BASS	PT Bahtera Adimina Samudra Tbk.	13.89	342524	14	3	0.002	0.21428571	66.64	27.26	6.1
11	BLTA	PT. Berlian Laju Tankers Tbk.	9.42	13886000	51	12.5	0.00318	0.24509804	98.7	47.97	13.33
12	BMTR	PT Bimantara Citra Tbk.	8.36	2905527	341	20	0.00107	0.05865103	59.06	21.18	19.76
13	BTON	PT Betonjaya Manunggal Tbk.	11.37	27000	13	2.5	0.00157	0.19230769	5.64	94.34	0.02
14	BYSB	PT. Bayer Indonesia Tbk.	1.67	33699	2460	100	0.00071	0.04065041	3.95	8.97	87.08
15	CLPI	PT Colorpak Indonesia Tbk.	13.66	117921	28	9.6	0.00026	0.34285714	58.51	16.41	25.08
16	CMPP	PT. Centris Multi Persada Pratama Tbk.	6.63	16200	45	20	0.00104	0.44444444	62.96	28.58	8.46
17	DLTA	PT Delta Djakarta Tbk.	2.93	131308	2800	400	0.00029	0.14285714	26.3	15.4	58.3
18	DNKD	PT. Dankos Laboratories Tbk.	3.83	357210	104	20	0.00145	0.19230769	71.46	23.22	5.32
19	DPNS	PT Duta Pertiwi Nusantara Tbk.	10.45	32116	21	25	0.00128	1.19047619	47.97	45.71	6.32
20	DYNA	PT Dynaplast Tbk.	5.49	257205	155	50	0.00159	0.32258065	30.29	37.38	32.33
21	EKAD	PT Ekadharma Tape Industries Tbk.	3.58	22361	140	90	0.00122	0.64285714	72.82	19.16	8.02
22	ERTX	PT Eratex Djaja Ltd. Tbk.	4.58	19647	44	15	0.00248	0.34090909	19.61	30.39	50
23	ESTI	PT Ever Shine Textile Industry Tbk.	405.3	604563	1	2	0.00016	2	65.68	27.41	6.91
24	FAST	PT Fast Food Indonesia Tbk.	10.67	401625	84	11	0.00033	0.13095238	80	18.14	1.86
25	FPNI	PT Fatrapolindo Nusa Industri Tbk.	4.48	129213	70	25	0.00085	0.35714286	32.6	50.13	17.27
26	GDYR	PT. Goodyear Indonesia Tbk.	10.84	178350	401	120	0.00069	0.29925187	4.51	10.49	85
27	GGRM	PT Gudang Garam Tbk.	7.65	15969930	1085	300	0.00052	0.2764977	72.12	12.89	14.99

28	HEXA	PT. Hexindo Adiperkasa Tbk.	1.7	66360	232	180	0.00361	0.77586207	7.79	15.77	76.44
29	HITS	PT. Humpuss Intermoda Transportasi Tbk.	2.58	360000	310	100	0.00123	0.32258065	63.58	16.45	19.71
30	HMSP	PT Hanjaya Mandala Sampoerna Tbk.	9.96	16650000	371	25	0.00068	0.06738544	5.2	57.31	37.49
31	IATG	PT Infoasia Teknologi Global Tbk.	119.1	541129	6	1	0.00156	0.16666667	70.79	28.9	0.31
32	IGAR	PT Igar Jaya Tbk.	4.82	89250	18	2	0.0028	0.11111111	51.13	15.86	33.01
33	INCI	PT Intan Wijaya Chemical Industry Tbk.	9.35	46383	29	50	0.00182	1.72413793	84.38	3.85	11.77
34	INTA	PT. Intraco Penta Tbk.	2.66	41760	90	8	0.00202	0.08888889	66.5	32.46	1.04
35	ISAT	PT. Indonesian Satelite Coorporation (Perser	28.49	9578375	325	561.2	0.00067	1.72676923	15	29.35	55.65
36	KAEF	PT. Kimia Farma Tbk.	29.02	1027490	6	10.72	0.00136	1.78666667	90.03	4.95	5.02
37	KOMI	PT Komatsu Indonesia Tbk.	5.73	308448	140	40	0.00071	0.28571429	18.28	16.07	65.65
38	LAMI	PT Lamicitra Nusantara Tbk.	137.5	172263	1	1	0.00304	1	92.88	7.11	0.01
39	LAPD	PT Lapindo Packaging Tbk.	66.58	124104	7	3	0.00202	0.42857143	81.16	18.79	0.05
40	LTLS	PT Lautan Luas Tbk.	7.22	140400	25	15.5	0.00079	0.62	63.03	27.61	9.36
41	MEDC	PT Medco Energi Corporation Tbk.	15.12	4498809	89	110	0.00098	1.23595506	9.14	11.99	78.87
42	MPPA	PT. Matahari Putera Prima Tbk.	12.85	1352997	39	11	0.00144	0.28205128	7.07	5.64	87.29
43	MRAT	PT. Mustika Ratu Tbk.	7.53	154080	48	254	0.00402	5.29166667	71.26	9.45	19.29
44	PANR	PT Panorama Sentrawisata Tbk.	206.8	270000	3	9.48	0.0006	3.16	71.67	28.28	0.05
45	PBRX	PT Pan Brothers Tex Tbk.	9.52	153600	210	50	0.00085	0.23809524	23.38	5.6	71.12
46	PLAS	PT Plastpack Prima Industri Tbk.	9.84	15000	6	2	0.00187	0.33333333	38	42	20
47	PLIN	PT Plaza Indonesia Realty Tbk.	8.87	1380000	451	10	0.00062	0.02217295	54.17	30.88	14.95
48	PTRO	PT Petrosea Tbk.	6.69	156465	228	200	0.0013	0.87719298	50.43	32.6	16.29
49	PYFA	PT Pyridam Farma Tbk.	9.84	147147	6	3.34	0.00057	0.55666667	53.85	40.8	5.35
50	RALS	PT. Ramayana Lestari Sentosa Tbk.	11.8	3535000	214	100	0.00076	0.46728972	66.5	25.41	8.09
51	RIGS	PT. Rig Tenders Indonesia Tbk.	18.48	213196	189	500	0.00091	2.64550265	5.12	23.18	71.7
52	RYAN	PT Ryane Adibusana Tbk.	1.87	2750	3	2	0.00739	0.66666667	20.58	26.95	34.29
53	SCCO	PT Supreme Cable Manufacturing Corporation (Sucaco) Tbk.	3.44	210723	298	30	0.0003	0.10067114	45.72	42.47	11.81
54	SIMA	PT Siwani Makmur Tbk. (Van Der Horst Indonesia) (Super Indah Makmur)	16.95	18038	12	5	0.00205	0.41666667	35.96	43.57	11.89
55	SMDR	PT. Samudera Indonesia Tbk.	4.62	380773	504	122	0.0016	0.24206349	65.74	25.74	8.52
56	SMGR	PT Semen Gresik (Persero) Tbk.	17.99	4834189	453	267.61	0.00101	0.59075055	51.01	23.46	25.53
57	SMRA	PT Summarecon Agung Tbk.	2.2	187353	45	30	0.00907	0.66666667	39.93	53.03	7.04
58	SMSM	PT. Selamat Sempurna Tbk.	9.36	376614	155	90	0.00042	0.58064516	68.02	26.68	5.3
59	SSTM	PT Sunson Textile Manufacturer Tbk.	3.32	75304	27	3	0.00187	0.11111111	57.37	13.25	29.38

60	TBMS	PT Tembaga Mulia Semanan Tbk.	1.57	33061	1147	100	0.00073	0.08718396	33.81	15.16	51.03
61	TCID	PT. Mandom Indonesia Tbk. (Tancho Indones	4.03	234000	372	125	0.00112	0.33602151	19.1	20.75	60.15
62	TGKA	PT.Tiga Raksa Satria Tbk.	7.62	253679	381	100	0.00036	0.26246719	69.98	6.88	23.14
63	TINS	PT Tambang Timah (Persero) Tbk.	15.4	173639	22	24.83	0.00176	1.12863636	65	0.74	34.26
64	TIRT	PT Tirta Mahakam Plywood Industry Tbk.	6.78	78000	18	6.25	0.00151	0.34722222	35.74	35.22	29.04
65	TLKM	PT. Telekomunikasi Indonesia(Persero) Tbk.	4.65	38807999	828	210.82	0.00105	0.25461353	51.19	34.02	14.79
66	TSPC	PT. Tempo Scan Pacific Tbk.	5.87	1856250	703	300	0.00089	0.42674253	66.13	19.03	14.84
67	TURI	PT. Tunas Ridean Tbk.	5.41	497575	53	11	0.00126	0.20754717	48.17	18.13	33.7
68	UNIC	PT Unggul Indah Cahaya Tbk.	6.45	517497	209	28.68	0.00114	0.13722488	63.74	26.15	10.11

Appendix 1.6 ORIGINAL DATA YEAR 2003

No	CODE	COMPANY YEAR 2003	PER	MV	EPS	DPS	RISK	DPO	Ownership Structure		
									CORP	INDV	FOR
1	AALI	PT Astra Agro Lestari Tbk.	9	2661554	182	60	0.00055	0.32967033	65.93	16.11	17.96
2	ACAP	PT. Adhi Candra Automotive P Tbk.	28	385920	17	12.5	0.00004	0.735294118	64.93	35.01	0.66
3	ADES	PT Ades Alfindo Putrasetia Tbk.	22	77900	46	2	0.00207	0.043478261	28.13	34	37.87
4	ALFA	PT. Alfa Retailindo Tbk.	78	585000	16	11	0.00076	0.6875	80	14.2	5.8
5	AMFG	PT Asahimas Flat Glass Co. Ltd. Tbk.	5	857150	376	70	0.00102	0.186170213	50.13	24.72	25.15
6	ANTM	PT Aneka Tambang (Persero) Tbk.	16	3672307	119	34.42	0.00142	0.289243697	65	10.98	24.02
7	AQUA	PT Aqua Golden Mississippi Tbk.	10	629166	4716	860	0.00016	0.18235793	68.14	9.01	22.85
8	ARNA	PT Arwana Citramulia Tbk.	13	267153	23	5	0.00158	0.217391304	41.06	20.99	37.95
9	AUTO	PT. Astra Otoparts Tbk.	6	1170742	273	85	0.00053	0.311355311	70.9	13.32	15.78
10	BLTA	PT. Berlian Laju Tankers Tbk.	14	2068278	72	12.5	0.00073	0.173611111	45.64	36.75	17.61
11	BMTR	PT Bimantara Citra Tbk.	14	3277441	236	26	0.00057	0.110169492	58.36	21.96	19.68
12	BYSB	PT. Bayer Indonesia Tbk.	5	37186	1237	670	0.00057	0.541632983	3.95	8.64	87.41
13	CLPI	PT Colorpak Indonesia Tbk.	32	147027	15	8.4	0.00009	0.56	58.51	16.29	25.2
14	CMPP	PT. Centris Multi Persada Pratama Tbk.	7	16200	45	18	0.00301	0.4	62.96	28.58	8.46
15	CTBN	PT Citra Tubindo Tbk.	45	640000	180	245.94	0	1.366333333	27.87	36.43	35.7
16	DLTA	PT Delta Djakarta Tbk.	4	139315	2382	400	0.00027	0.167926113	26.3	15.4	58.3
17	DYNA	PT Dynaplast Tbk.	8	429998	178	60	0.00118	0.337078652	26.16	28.95	44.89
18	EKAD	PT Ekadharma Tape Industries Tbk.	10	42486	97	75	0.00094	0.773195876	72.82	22.13	5.05
19	FAST	PT Fast Food Indonesia Tbk.	11	412781	81	16	0	0.197530864	80	18.14	1.86
20	GDYR	PT. Goodyear Indonesia Tbk.	10	153750	363	150	0.0007	0.41322314	5.1	9.9	85
21	GGRM	PT Gudang Garam Tbk.	14	26167597	956	300	0.00035	0.313807531	72.12	27.88	17.02
22	HEXA	PT. Hexindo Adiperkasa Tbk.	4	155400	253	80	0.00119	0.316205534	5.09	10.69	84.22
23	HITS	PT. Humpuss Intermoda Transportasi Tbk.	4	528750	328	90	0.00174	0.274390244	63.84	16.45	19.71
24	HMSP	PT Hanjaya Mandala Sampoerna Tbk.	14	20137500	313	140	0.00046	0.447284345	5.2	54.66	40.14
25	IATG	PT Infoasia Teknologi Global Tbk.	28	443673	20	1.5	0.00193	0.075	70.35	29.36	0.29
26	INCI	PT Intan Wijaya Chemical Industry Tbk.	6	50600	47	10	0.00184	0.212765957	84.72	3.78	11.25
27	INDR	PT Indo-Rama Synthetics Tbk.	8	343535	62	10	0.00141	0.161290323	37.82	17.83	44.35

28	ISAT	PT. Indonesian Satelite Coorporation (Persero) T	10	15532500	1516	146.13	0.00046	0.096391821	15	6.92	78.08
29	KAEF	PT. Kimia Farma Tbk.	27	1166340	8	1.91	0.00119	0.23875	90.03	4.31	5.66
30	LTLS	PT Lautan Luas Tbk.	29	222300	10	5	0.00204	0.5	63.03	27.18	9.79
31	MEDC	PT Medco Energi Corporation Tbk.	10	4498809	135	111	0.00047	0.822222222	9.14	2.72	88.14
32	MPPA	PT. Matahari Putera Prima Tbk.	12	1420647	43	12	0.00121	0.279069767	50.24	23.4	26.36
33	MRAT	PT. Mustika Ratu Tbk.	17	186180	25	36	0.00075	1.44	71.26	19.29	9.45
34	PANR	PT Panorama Sentrawisata Tbk.	131	280000	5	1.25	0.00027	0.25	71.67	28.28	0.05
35	PBRX	PT Pan Brothers Tex Tbk.	25	147840	15	15	0.00291	1	21.47	16.08	62.45
36	PLIN	PT Plaza Indonesia Realty Tbk.	14	1863000	373	12.5	0.00072	0.033512064	51.36	32.39	16.25
37	PTRO	PT Petrosea Tbk.	7	176985	240	50	0.00059	0.208333333	50.1	17.79	32.11
38	RALS	PT. Ramayana Lestari Sentosa Tbk.	20	6090000	216	100	0.0008	0.462962963	64.07	27.41	8.52
39	RIGS	PT. Rig Tenders Indonesia Tbk.	13	371569	476	500	0.00081	1.050420168	10.03	29.53	60.44
40	SCCO	PT Supreme Cable Manufacturing Corporation (Sucaco) Tbk.	14	210723	74	50	0.00007	0.675675676	45.72	27.32	26.96
41	SHDA	PT Sari Husada Tbk.	12	2731110	1171	375	0.00034	0.320239112	10.79	4.69	84.52
42	SMDR	PT. Samudera Indonesia Tbk.	14	589522	264	122	0.00094	0.462121212	66.48	25	8.52
43	SMGR	PT Semen Gresik (Persero) Tbk.	13	4656243	600	115.03	0.00043	0.191716667	51.01	23.46	25.53
44	SMRA	PT Summarecon Agung Tbk.	9	1077279	65	10	0.00417	0.153846154	39.93	51.76	8.31
45	SMSM	PT. Selamat Sempurna Tbk.	7	344147	37	150	0.00304	4.054054054	68.02	30.74	1.24
46	TBMS	PT Tembaga Mulia Semanan Tbk.	5	40407	433	100	0.00141	0.230946882	33.81	15.16	51.03
47	TCID	PT. Mandom Indonesia Tbk. (Tancho Indonesia)	6	366600	401	150	0.00074	0.374064838	19.1	20.75	60.15
48	TGKA	PT.Tiga Raksa Satria Tbk.	5	284295	641	345	0.00008	0.538221529	76.44	6.83	16.73
49	TINS	PT Tambang Timah (Persero) Tbk.	17	1283420	152	65.89	0.00192	0.433486842	65	1.71	33.29
50	TIRT	PT Tirta Mahakam Plywood Industry Tbk.	19	117000	8	4.5	0.00287	0.5625	30.48	4.86	52.08
51	TLKM	PT. Telekomunikasi Indonesia(Persero) Tbk.	11	68039998	604	331.16	0.00058	0.548278146	51.19	33.4	15.41
52	TOTO	PT Surya Toto Indonesia Tbk.	7	230342	640	200	0.00008	0.3125	51.8	9.4	38.8
53	TSPC	PT. Tempo Scan Pacific Tbk.	8	2655000	717	400	0.00054	0.557880056	66.15	7.02	26.83
54	TURI	PT. Tunas Ridean Tbk.	5	418500	59	16	0.00083	0.271186441	47.47	18.83	33.7
55	UNIC	PT Unggul Indah Cahaya Tbk.	18	1149994	164	2871.1	0.00142	17.50670732	63.27	26.62	10.11

Appendix 2 DATA HAVE BEEN PROCESSED

No	Year	FIRMS	PER	MV	EG	DG	SD	DPO	CORP	INDV	FOR
1	1999	AALI	0.224299065	-0.035051546	-0.33908046	-0.32432432	-0.66080402	0.022326675	-0.08042543	0.112376614	1.666666667
2	1999	ANTM	0.100299401	-0.138461562	-0.26923077	3.64797239	-0.67699115	5.360383271	0	-0.13215859	2.226829268
3	1999	BRNA	0.262108262	3.5	2.465909091	-0.42857143	1.157549234	-0.835128806	0	-0.255144033	-0.61290323
4	1999	CNTX	5.647058824	1.4	-0.92752506	0.33333333	-0.32278481	17.39716312	0	0	-0.77454545
5	1999	DPNS	9	2.64	-0.39429929	0.81818182	-0.817367333	2.001782531	0	0.243702236	2.666666667
6	1999	GGRM	-0.315916788	0.613733906	1.050259965	1.16666667	-0.705188679	0.056776557	-0.023005751	0.086253369	3.436507937
7	1999	HITS	14.89047619	1.357142857	-0.8502994	1.5	-0.637513172	15.7	0	-0.007272727	4.111111111
8	1999	INCI	3.444444444	1.2	0.015463918	-0.625	-0.479262673	-0.63071066	0.023224654	-0.435704817	-0.7254902
9	1999	ISAT	0.071957672	0.496402878	0.370106762	1.53779104	-0.756578947	0.852257879	0	-0.4	-0.45588235
10	1999	KICI	6.594594595	4.452898551	-0.70520231	2.63636364	-0.581761006	11.33511586	0.01635795	-0.02955665	0.009685941
11	1999	LTLS	0.354132458	1.145	-0.9468599	0.32	-0.03125	23.84	0	2.028985507	0.218214286
12	1999	MERK	-0.521988528	3.472368421	-0.15028902	3	0.256038647	3.707482993	-0.011709602	0.202290076	-0.88041489
13	1999	MRAT	1.92	1.105263158	-0.15450644	0.25	-0.145118734	0.478426396	0	33.80769231	1.843508772
14	1999	RALS	1.769069279	2.064935065	0.095588235	-0.2	-0.682182986	-0.269798658	0.00775066	-0.040997464	-0.30127389
15	1999	RDTX	1.588333333	0.342105263	-0.44242424	1	-0.37244898	2.586956522	0.085726977	-0.259276438	0.486238532
16	1999	RIGS	4.680555556	1.037037037	-0.58195408	2.88059701	-0.522807018	8.282705248	-0.000996016	-0.166709022	-0.78857933
17	1999	SIIP	9.747508306	0.5	-0.85714286	-0.96262695	-0.163516845	-0.738388626	-0.48625945	0.315027158	570.8
18	1999	SMGR	0.228622862	0.334337349	-0.09777778	-0.13875781	-0.673316708	-0.04542122	0.000196078	-0.191034483	0.77
19	1999	SMSM	1.652014652	0.85625	-0.47098976	1.58823529	-0.692189893	3.89259962	0	0.014450867	4.890697674
20	1999	SSTM	-0.622578692	2.428571311	1.181818182	-0.36	-0.436141304	-0.706666667	-0.010862069	-0.720714286	-0.79144385
21	1999	STTP	0.453514739	0.950617284	0.236947791	0.41666667	-0.807860262	0.145292208	-0.004662005	0.010927152	4.669724771
22	1999	TCID	0.717131474	2.333333333	0.926910299	2	-0.310810811	0.556896552	0	0.054929964	-0.8977937
23	1999	TGKA	20.44680851	2.636363636	-0.85043103	-0.85714286	0.020100503	-0.044874434	0.025683789	-0.409574468	10.54524887
24	1999	TINS	0.479846449	-0.093023273	-0.38700291	1.89593657	-0.47008547	3.72422564	0	0.04	-0.864
25	1999	TLKM	-0.14471243	0.59	0.728	0.05134021	-0.611731844	-0.391585529	0.018307692	-0.154814815	0.506976744
26	2000	AALI	0.228420435	-0.5	-0.59130435	0.8	-0.57037037	3.404255319	0.025730994	-0.415184382	-0.09642857
27	2000	ANTM	-0.606802721	-0.674064984	0.636842105	0.47002042	-0.315068493	-0.101916785	0	-0.445142857	0.018300654
28	2000	AQUA	-0.18813559	0.750003656	1.154867257	0.33333333	0.007633588	-0.381245722	0.001729413	-0.919049537	0.040825688

29	2000	BGMT	-0.52444185	0.378045439	-0.1875	-0.27777778	-0.004484305	-0.111111111	-0.921205848	2.376486129	6.179166667
30	2000	BRNA	-0.322799097	-0.203703704	0.118032787	4	-0.918864097	3.472140762	0	-0.261316872	0.024193548
31	2000	CNTX	0	-0.25333333	3.074468085	0	-0.738317757	-0.754569191	0	0.024285714	-0.01545455
32	2000	DPNS	-0.24363636	-0.50714283	-0.45882353	-0.5	-0.566037736	-0.076086957	0	-0.007055075	0.048513302
33	2000	EKAD	0.266009852	-0.377777778	-0.50902527	-0.71428571	-0.124497992	-0.418067227	0	-0.330514706	0.4046875
34	2000	GGRM	-0.21145686	-0.308510638	-0.01437025	0.92307692	-0.384	0.951114923	-0.051446122	-0.467063129	0.03115942
35	2000	HITS	-0.98351813	-0.27272727	37.48	-0.7	-0.037790698	-0.992203742	-0.235786954	-0.000607903	6.039285714
36	2000	INCI	-0.39285714	-0.36363636	0.005076142	-0.33333333	-0.659292035	-0.336700337	0	-0.603773585	0.020540541
37	2000	ISAT	-0.43928924	-0.423076923	0.02987013	-0.21661805	-0.342342342	-0.239339089	0	-0.941714286	-0.04186047
38	2000	KICI	-0.82918149	-0.79623477	1.450980392	-0.7	0.078947368	-0.8776	0	0	0
39	2000	LTLS	-0.508892482	-0.509090909	0	-0.45454545	-0.478494624	-0.454545455	0	-0.207195023	-0.21836735
40	2000	MRAT	-0.60702055	-0.325	0.492385787	-0.1375	0.021604938	-0.422066327	-0.99	0.083977901	-0.13855971
41	2000	RALS	-0.27773566	-0.11016949	0.234899329	1.5	-0.46969697	1.024456522	0.07183767	-0.55218509	0.054320988
42	2000	RDTX	-0.24597553	-0.17647059	-0.02173913	-0.5625	-0.642276423	-0.552777778	0.036274376	-0.329958755	-0.42616822
43	2000	RIGS	-0.68704156	0.018181818	1.795657727	-0.00769231	-0.286764706	-0.645053941	0	0	0
44	2000	SMGR	-0.63223443	-0.47629797	0.42364532	0.20124389	-0.229007634	-0.156219689	0	0	0
45	2000	SMSM	0.215469613	0.777777778	0.464516129	-0.76515152	-0.641791045	-0.839640902	0	-0.160725453	0.317948718
46	2000	STTP	3.190327613	-0.04556962	-0.91233766	0.29411765	3.022727273	13.76252723	0	0	0
47	2000	TCID	-0.01044084	0.16	-0.4137931	1.66666667	0.637254902	3.549019608	4.693181818	-0.82530591	-0.3499902
48	2000	TGKA	0.635912698	-0.25	-0.47550432	1	-0.871921182	2.813186813	0.017777778	0.411411411	-0.68099548
49	2000	TINS	-0.72892348	-0.71794882	0.042721519	-0.39530165	-0.298387097	-0.42007685	0	-0.853142857	-0.07839506
50	2000	TLKM	-0.53362256	-0.48427673	0.101851852	0.05667778	-0.532374101	-0.040998317	0.175253059	-0.993493049	-0.01830357
51	2000	TSPC	-0.86603837	-0.47881356	2.884422111	1	-0.807807808	-0.485122898	-0.001058841	-0.565063441	-0.11018519
52	2001	AALI	0.079827916	-0.05128205	0.255319149	-0.84444444	3.775862069	-0.876082863	-0.061193463	0.205489614	0.27140975
53	2001	ANTM	-0.04844291	0.753197854	-0.06430868	0.96489456	0.72	1.099938857	0	-0.044284243	0.055198973
54	2001	AQUA	1.002087683	1.142852747	0.248459959	0.25	-0.060606061	0.001233553	0.000664011	3.482587065	-0.31070956
55	2001	BASS	-0.42088091	-0.49891219	-0.125	-0.88	-0.705410822	-0.862857143	0	0	0
56	2001	BLTA	0.666494579	0.845873173	0	0.5	-0.210526316	0.5	-0.105733722	0.243966942	-0.10601093
57	2001	BRNA	-0.38	-0.09302326	0.542521994	0.5	0.7	-0.02756654	0.09766537	-0.153481894	0.038582677
58	2001	BYSB	1.856818182	-0.20224719	-0.72233607	0.8	0.788732394	5.482656827	0	0	0
59	2001	CMPP	-0.54166667	-0.41666667	0.315789474	1.5	-0.361111111	0.9	0.000635324	-0.00139958	0
60	2001	CNTX	-0.4719764	-0.10714286	0.457963446	0	0.892857143	-0.314111748	1.279	-0.691492329	0.221606648

61	2001	DLTA	-0.20869565	0.027023072	0.296554935	-0.14285714	-0.936507937	-0.338907412	0.011538462	-0.144444444	0.041071429
62	2001	DNKD	-0.35435993	-0.16363636	0.294117647	19	-0.293577982	14.45454545	0	-0.154211151	0.22260274
63	2001	DPNS	0.122596154	-0.33043482	-0.37681159	0	-0.095652174	0.604651163	0.020132877	-0.165482466	0.928358209
64	2001	EKAD	-0.34435798	-0.35714286	-0.01470588	-0.25	-0.201834862	-0.23880597	0	0.091707853	-0.18576196
65	2001	FAST	-0.17744917	-0.91842105	-0.01694915	-0.9	-0.902439024	-0.898275862	0	5.046666667	-0.814
66	2001	GGRM	-0.28520179	-0.33461538	-0.06946827	0	-0.337662338	0.074654378	-0.02698327	0.096137339	0.061841181
67	2001	HITS	1.618181818	0.125	-0.51351351	2.33333333	-0.432024169	5.851851852	0	0	0
68	2001	HMSP	-0.77899985	0.041425596	-0.03196347	0.4	2.880952381	0.446226415	0.031199743	1.162646199	-0.788929
69	2001	INCI	-0.32058824	-0.27678571	-0.11616162	0	0.467532468	0.131428571	0	0.284100081	-0.18644068
70	2001	ISAT	0.186619718	0.05	-0.11538462	0.83423423	-0.205479452	1.073482178	0	-0.852941176	0.052791262
71	2001	KICI	0.416666667	-0.4	-0.496	0.66666667	-0.379790941	2.306878307	0	0.000423012	-0.00029317
72	2001	KOMI	1.089219331	-0.19512195	-0.61417323	0	0.205882353	1.591836735	0	-0.266265513	0.128423726
73	2001	LTLS	-0.68559671	-0.40740741	0.909090909	-0.61111111	-0.432989691	-0.796296296	0.004759638	-0.022176731	0.045691906
74	2001	MPPA	1.430962343	-0.13	-0.64761905	0.87878788	-0.241071429	4.331695332	0.226415094	-0.640419948	0.038834951
75	2001	MRAT	-0.19825708	-0.07407407	0.156462585	1.17391304	-0.401812689	0.879795396	0	0	0
76	2001	PBRX	-0.3958021	-0.26923077	-0.3025641	0	1.804597701	0.433823529	0	0	0
77	2001	PTRO	-0.68822171	0.033333333	2.309248555	0.42857143	0.729411765	-0.56830942	-0.157281891	-0.235225049	-0.0006252
78	2001	RALS	-0.59062281	0.019047619	0.244565217	-0.25	0.266666667	-0.397379913	0	0.454075775	-0.46311475
79	2001	RDTX	2.896669513	0.119047619	-0.71111111	-0.5	0.454545455	0.730769231	0.040531649	-0.425293788	0.736156352
80	2001	RIGS	0.3984375	0.080357172	-0.22613065	0.9379845	-0.525773196	1.504278667	0	-0.099420555	0.057012942
81	2001	SMDR	0.657575758	0.365853689	-0.17552335	0	1.1	0.212890625	0.015434481	-0.001396648	0.032727273
82	2001	SMGR	0.023904382	-0.05172414	-0.07439446	0.42467949	0.237623762	0.539186437	0	0	0
83	2001	SMSM	-0.02727273	-0.0875	-0.07488987	0.83870968	-0.152777778	0.987557604	0	-0.005216095	0.027237354
84	2001	TBMS	-0.45779685	7.081488081	1.735751295	0.14285714	-0.404040404	-0.582251082	0.200220426	-0.250574713	0
85	2001	TCID	81.06330598	-0.27586207	-0.11764706	-0.625	-0.868263473	-0.575	-0.868429807	3.680819912	0.812481158
86	2001	TGKA	-0.53365676	0.333333333	1.857142857	0.25	-0.192307692	-0.5625	0	0	0
87	2001	TINS	1.813397129	-0.68727261	-0.8892261	-0.03844444	2.620689655	7.680344069	0	-0.628404669	0.108171467
88	2001	TIRT	-0.03253796	10.07034413	-0.19047619	0	-0.791252485	0.235294118	-0.021893815	0.023242301	0
89	2001	TLKM	-0.11744186	0.56097561	0.773109244	0.63622866	0.384615385	-0.077198056	-0.302095385	49.22727273	0.576170987
90	2001	TSPC	0.158291457	0.056910569	-0.08926261	2	-0.140625	2.294034091	0.000302847	0.736770692	-0.566077
91	2001	TURI	-0.76104053	0	-0.16176471	0.96428571	2.205357143	1.343358396	0	-0.499095023	0
92	2002	AALI	-0.54360336	0.694992051	1.542372881	0.42857143	-0.483754513	-0.438095238	-0.097975709	0.163076923	0.477720207

93	2002	ACAP	-0.67725908	-0.75675676	-0.26315789	-0.1	2.581081081	0.221428571	0.000154036	0.068965517	-0.7716263
94	2002	ALFA	-0.04200323	0.107142857	0.140350877	0.28571429	1.13559322	0.127472527	0.022887099	-0.123997532	0.039426523
95	2002	ANTM	1.061818182	0.162499827	-0.63573883	-0.39672237	1.593023256	0.656167847	0	0.284482759	-0.32116788
96	2002	AQUA	-0.22106361	0.250000665	0.37691886	0.25	-0.491935484	-0.09217599	-0.087989383	0	0.452685422
97	2002	BASS	-0.02183099	-0.30916049	-0.33333333	0	0.360544218	0.5	-0.061143984	0.387983707	-0.34968017
98	2002	BLTA	-0.70817844	14.25769685	-0.07272727	-0.16666667	6.066666667	-0.10130719	1.145185829	0.27478076	-0.18520782
99	2002	BMTR	0.985748219	1.0048833	0.00887574	0.33333333	-0.108333333	0.321603128	0.064911648	-0.309197652	0.423631124
100	2002	BYSB	-0.86714399	0.021113125	8.077490775	-0.44444444	-0.440944882	-0.938798555	0	0	0
101	2002	CMPP	0.095867769	-0.14285714	-0.1	0.33333333	-0.354037267	0.481481481	-0.000634921	0.001401542	0
102	2002	DLTA	0.073260073	0.078946638	0.005385996	0.33333333	2.625	0.326190476	0	0	0
103	2002	DNKD	-0.44971264	-0.13043478	0.575757576	0	0.883116883	-0.365384615	0	0.628330996	-0.62745098
104	2002	DPNS	1.237687366	-0.33766612	-0.75581395	-0.5	0.230769231	1.047619048	-0.053285968	0.255424334	-0.51083591
105	2002	EKAD	0.06231454	0.111121049	0.044776119	0.2	-0.298850575	0.148571429	0.000274725	-0.036217304	0.095628415
106	2002	ERTX	-0.27070064	-0.52381437	-0.34328358	-0.4	0.968253968	-0.086363636	-0.196640721	0.187573271	0
107	2002	FAST	-0.20074906	0.161290323	0.448275862	0	7.25	-0.30952381	0	0	0
108	2002	GGRM	-0.04015056	-0.04046245	0	-0.4	0.019607843	-0.4	0	0.009397024	-0.00794176
109	2002	HEXA	-0.375	0.128571429	-0.09727626	3.5	0.890052356	3.984913793	-0.044171779	0.075716235	-0.00971628
110	2002	HITS	0.791666667	0.185185185	-0.33760684	1	-0.345744681	2.019354839	-0.004228661	0.000608273	0
111	2002	HMSP	-0.33908427	0.15625	0.75	-0.92857143	-0.791411043	-0.959183673	-0.837804117	-0.031434849	3.274800456
112	2002	IGAR	-0.43294118	0.307692308	1.25	-0.75	0.505376344	-0.888888889	0	-0.034692635	0.0175709
113	2002	INCI	3.047619048	-0.09465671	-0.83428571	0	0.610619469	5.034482759	0.227702604	-0.758013828	-0.23372396
114	2002	INTA	-0.06993007	-0.04	0.022727273	-0.17269907	-0.37654321	-0.191083534	-0.047004872	0.110502908	0.050505051
115	2002	ISAT	3.227002967	-0.02116402	-0.76835353	-0.08120498	0.155172414	2.966367437	-0.769230769	96.83333333	0.603746398
116	2002	KOMI	0.019572954	-0.03030303	-0.04761905	-0.61538462	-0.134146341	-0.596153846	0	-0.176319836	0.055296576
117	2002	LTLS	0.890052356	-0.25	-0.6031746	1.21428571	0.436363636	4.58	-0.004737091	-0.036636427	0.168539326
118	2002	MEDC	1.260089686	-0.10000009	-0.60267857	0.29411765	-0.155172414	2.257105089	2.656	-0.005804312	-0.07689607
119	2002	MPPA	0.105851979	0.149425287	0.054054054	-0.64516129	0.694117647	-0.663358147	-0.163313609	1.058394161	-0.01711519
120	2002	MRAT	1.046195652	0.152	-0.85882353	0.69333333	1.03030303	10.99444444	0.004652474	-0.518348624	1.041269841
121	2002	PBRX	1.362282878	1.105263158	0.544117647	0.42857143	-0.651639344	-0.074829932	0.113333333	-0.338842975	0.008365235
122	2002	PTRO	3.955555556	-0.01612903	-0.80087336	1	-0.115646259	9.043859649	0.040008249	0.668372569	-0.49045981
123	2002	RALS	0.008547009	-0.05607477	-0.06550218	0.33333333	-0.428571429	0.426791277	0.015267176	0.00315831	-0.11777535
124	2002	RIGS	9.324022346	0.157027476	-0.88842975	0	0.97826087	7.962962963	-0.489531406	-0.215035557	0.186300463

125	2002	SCCO	-0.77442623	0.025000073	3.515151515	-0.625	-0.571428571	-0.916946309	0	0	0
126	2002	SMDR	-0.15539305	-0.23475963	-0.015625	0	-0.307359307	0.015873016	-0.000759994	0.2	0
127	2002	SMGR	0.75	0.481818243	-0.15327103	0.15778316	-0.192	0.367359805	0	0	0
128	2002	SMRA	3.583333333	0.833334508	-0.92834395	0.2	2.227758007	15.74666667	0	-0.117196604	0.232924694
129	2002	SMSM	0.093457944	-0.20547935	-0.26190476	0.57894737	-0.31147541	1.139219015	0	-0.000749064	0.003787879
130	2002	TBMS	-0.58575198	-0.54999456	0.086174242	0.25	-0.381355932	0.150828248	0.034894399	-0.06993865	0
131	2002	TCID	-0.99424286	-0.28571429	0.24	-0.16666667	1.545454545	-0.327956989	1.414664981	-0.350954019	0.000499002
132	2002	TGKA	-0.00910273	-0.27499986	-0.26730769	-0.6	-0.142857143	-0.454068241	-0.254659708	0.463829787	15.41134752
133	2002	TINS	1.619047619	-0.1976753	-0.69863014	-0.89561086	-0.441269841	-0.653617865	0	-0.612565445	0.035358114
134	2002	TIRT	-0.23991031	-0.94057143	0.058823529	0	0.438095238	-0.055555556	0	0	0
135	2002	TLKM	-0.38735178	0.203125012	0.962085308	1.39133394	0.166666667	0.218771645	-0.057100755	2.078733032	-0.57328332
136	2002	TSPC	0.273318872	0.269230769	-0.00142045	1	0.618181818	1.00284495	0.001059643	-0.256640625	0.779376499
137	2002	TURI	0.369620253	0.585264835	-0.07017544	-0.8	-0.64902507	-0.78490566	0.005636743	0.637759711	0.123333333
138	2003	AALI	-0.12706111	0.124511746	0.213333333	5	-0.615384615	3.945054945	-0.013614602	-0.147619048	0.259467041
139	2003	ACAP	-0.10198845	0.066666667	0.214285714	-0.30555556	-0.98490566	-0.428104575	0	0.017436792	0
140	2003	ALFA	5.576728499	0.612903226	-0.75384615	0.22222222	-0.396825397	3.965277778	0	0	0
141	2003	AMFG	0.798561151	0.490566038	-0.21008403	0.59090909	-0.177419355	1.014023211	0.238083477	-0.355578728	0.189125296
142	2003	ANTM	1.821869489	2.208333807	0.122641509	-0.63332268	-0.3632287	-0.673379866	0	-0.53942953	1.152329749
143	2003	AQUA	0.338688086	0.274665565	-0.06111885	0.376	-0.746031746	0.465574215	-0.008440047	0	0.005721831
144	2003	ARNA	1.152317881	1.950011042	0.352941176	0	0.858823529	-0.260869565	0	-0.388225007	0.540803898
145	2003	AUTO	0.470588235	0.115096457	-0.20408163	0.30769231	-0.3375	0.642998028	-0.187950979	25.11764706	0.295566502
146	2003	BLTA	0.486199575	-0.851053	0.411764706	0	-0.770440252	-0.291666667	-0.537588652	-0.233896185	0.32108027
147	2003	BMTR	0.674641148	0.128002252	-0.30791789	0.3	-0.46728972	0.878389831	-0.011852354	0.036827195	-0.00404858
148	2003	BYSB	1.994011976	0.103474881	-0.49715447	5.7	-0.197183099	12.32417138	0	-0.036789298	0.003789619
149	2003	CLPI	1.342606149	0.246826265	-0.46428571	-0.125	-0.653846154	0.633333333	0	-0.007312614	0.004784689
150	2003	CMPP	0.055806938	0	0	-0.1	1.894230769	-0.1	0	0	0
151	2003	DLTA	0.365187713	0.060978767	-0.14928571	0	-0.068965517	0.175482788	0	0	0
152	2003	DYNA	0.4571949	0.671810424	0.148387097	0.2	-0.257861635	0.04494382	-0.13634863	-0.225521669	0.388493659
153	2003	EKAD	1.793296089	0.900004472	-0.30714286	-0.16666667	-0.229508197	0.202749141	0	0.155010438	-0.37032419
154	2003	FAST	0.030927835	0.027777155	-0.03571429	0.45454545	-1	0.508417508	0	0	0
155	2003	GDYR	-0.07749077	-0.13793103	-0.09476309	0.25	0.014492754	0.380853994	0.130820399	-0.056244042	0
156	2003	GGRM	0.830065359	0.63855427	-0.11889401	0	-0.326923077	0.134937238	0	1.16291699	0.135423616

157	2003	HEXA	1.352941176	1.341772152	0.090517241	-0.55555556	-0.670360111	-0.592446201	-0.346598203	-0.322130628	0.101779173
158	2003	HITS	0.550387597	0.46875	0.058064516	-0.1	0.414634146	-0.149390244	0.004089336	0	0
159	2003	HMSP	0.40562249	0.209459459	-0.15633423	4.6	-0.323529412	5.637699681	0	-0.046239749	0.070685516
160	2003	IATG	-0.7648837	-0.18009754	2.333333333	0.5	0.237179487	-0.55	-0.006215567	0.015916955	-0.06451613
161	2003	INCI	-0.35828877	0.090916931	0.620689655	-0.8	0.010989011	-0.876595745	0.004029391	-0.018181818	-0.04418012
162	2003	ISAT	-0.64899965	0.621621622	3.664615385	-0.73961155	-0.313432836	-0.944177937	0	-0.764224872	0.403054807
163	2003	KAEF	-0.06960717	0.135135135	0.333333333	-0.82182836	-0.125	-0.866371269	0	-0.129292929	0.12749004
164	2003	LTLS	3.016620499	0.583333333	-0.6	-0.67741935	1.582278481	-0.193548387	0	-0.015574067	0.045940171
165	2003	MEDC	-0.33862434	0	0.516853933	0.00909091	-0.520408163	-0.334747475	0	-0.773144287	0.117535184
166	2003	MPPA	-0.06614786	0.050000111	0.102564103	0.09090909	-0.159722222	-0.010570825	6.106082037	3.14893617	-0.6980181
167	2003	MRAT	1.257636122	0.208333333	-0.47916667	-0.85826772	-0.813432836	-0.727874016	0	1.041269841	-0.51010886
168	2003	PANR	-0.36647645	0.037037037	0.666666667	-0.86814346	-0.55	-0.920886076	0	0	0
169	2003	PBRX	1.62605042	-0.0375	-0.92857143	-0.7	2.423529412	3.2	-0.081693755	1.871428571	-0.12190664
170	2003	PLIN	0.578354002	0.35	-0.172949	0.25	0.161290323	0.511394102	-0.051873731	0.048898964	0.086956522
171	2003	PTRO	0.046337818	0.131147541	0.052631579	-0.75	-0.546153846	-0.7625	-0.006543724	-0.454294479	0.971147944
172	2003	RALS	0.694915254	0.722772277	0.009345794	0	0.052631579	-0.009259259	-0.036541353	0.07870917	0.05315204
173	2003	RIGS	-0.2965368	0.742851648	1.518518519	0	-0.10989011	-0.602941176	0.958984375	0.273943054	-0.15704324
174	2003	SCCO	3.069767442	0	-0.75167785	0.66666667	-0.766666667	5.711711712	0	-0.356722392	1.282811177
175	2003	SMDR	2.03030303	0.54822427	-0.47619048	0	-0.4125	0.909090909	0.011256465	-0.028749029	0
176	2003	SMGR	-0.27737632	-0.0368099	0.324503311	-0.57015807	-0.574257426	-0.67546934	0	0	0
177	2003	SMRA	3.090909091	4.749995997	0.444444444	-0.66666667	-0.540242558	-0.769230769	0	-0.023948708	0.180397727
178	2003	SMSM	-0.25213675	-0.08620763	-0.76129032	0.66666667	6.238095238	5.981981982	0	0.152173913	-0.76603774
179	2003	TBMS	2.184713376	0.222195336	-0.62249346	0	0.931506849	1.648960739	0	0	0
180	2003	TCID	0.488833747	0.566666667	0.077956989	0.2	-0.339285714	0.113216958	0	0	0
181	2003	TGKA	-0.34383202	0.120687956	0.682414698	2.45	-0.777777778	1.050624025	0.092312089	-0.007267442	-0.27700951
182	2003	TINS	0.103896104	6.39131186	5.909090909	1.65364478	0.090909091	-0.615919834	0	1.310810811	-0.0283129
183	2003	TIRT	1.802359882	0.5	-0.55555556	-0.28	0.900662252	0.62	-0.147174035	-0.862010221	0.79338843
184	2003	TLKM	1.365591398	0.753246747	-0.2705314	0.57081871	-0.447619048	1.15337399	0	-0.018224574	0.041920216
185	2003	TSPC	0.36286201	0.43030303	0.019914651	0.33333333	-0.393258427	0.307298931	0.000302435	-0.631108776	0.807951482
186	2003	TURI	-0.07578558	-0.15892077	0.113207547	0.45454545	-0.341269841	0.306625578	-0.014531866	0.038610039	0
187	2003	UNIC	1.790697674	1.22222351	-0.215311	99.1080893	0.245614035	126.5767723	-0.007373706	0.017973231	0

Appendix 3.1 STATISTICAL CALCULATION OF EQUATION 3.1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.597[a]	.357	.330	1.76761273	1.529

a. Predictors: (Constant), FOR, INDV, DG, EG, CORP, SD, DPO

b. Dependent Variable: PER

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	294.642	7	42.092	13.472	.000[a]
	Residual	531.157	170	3.124		
	Total	825.800	177			

a. Predictors: (Constant), FOR, INDV, DG, EG, CORP, SD, DPO

b. Dependent Variable: PER

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.326	.155		2.100	.037		
	EG	-.270	.135	-.135	-1.996	.048	.826	1.211
	DG	-.356	.092	-.291	-3.868	.000	.667	1.499
	SD	-.192	.115	-.107	-1.664	.098	.918	1.090
	DPO	.346	.055	.513	6.338	.000	.577	1.734
	CORP	.228	.443	.032	.514	.608	.949	1.053
	INDV	.001	.027	.003	.046	.964	.986	1.014
	FOR	.442	.083	.337	5.348	.000	.954	1.048

a. Dependent Variable: PER

Appendix 3.2 STATISTICAL CALCULATION OF EQUATION 3.2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.237[a]	.056	.001	.384754111993831	1.854

a. Predictors: (Constant), FOR, DG, INDV, EG, SD, CORP, DPO

b. Dependent Variable: MV

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.062	7	.152	1.025	.417[a]
	Residual	17.912	121	.148		
	Total	18.975	128			

a. Predictors: (Constant), FOR, DG, INDV, EG, SD, CORP, DPO

b. Dependent Variable: MV

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.088	.040		2.174	.032		
	EG	.018	.056	.034	.326	.745	.714	1.400
	DG	.032	.043	.095	.755	.452	.494	2.026
	SD	.098	.062	.145	1.564	.120	.903	1.107
	DPO	-.019	.023	-.114	-.820	.414	.401	2.492
	CORP	.286	.239	.115	1.198	.233	.852	1.174
	INDV	.012	.015	.074	.821	.414	.957	1.045
	FOR	.129	.063	.194	2.061	.041	.879	1.138

a. Dependent Variable: MV

Appendix 3.3 OUTLIER TESTING FOR EQUATION 3.1

	PER	MV	EG	DG	SD	DPO	CORP	INDV	FOR	COO_1
1	20.44681	2.636364	-0.850431	-0.857143	0.020101	-0.044874	0.025684	-0.409574	10.54525	0.00803
2	-0.200749	0.16129	0.448276	0	7.25	-0.309524	0	0	0	0.00705
3	-0.708178	14.2577	-0.072727	-0.166667	6.066667	-0.101307	1.145186	0.274781	-0.185208	0.0042
4	9.324022	0.157028	-0.88843	0	0.978261	7.962963	-0.489531	-0.215036	0.186301	0.00389
5	-0.117442	0.560976	0.773109	0.636229	0.384615	-0.077198	-0.302095	49.22727	0.576171	0.00304
6	1.26009	-0.1	-0.602679	0.294118	-0.155172	2.257105	2.656	-0.005804	-0.076896	0.00195
7	9	2.64	-0.394299	0.818182	-0.817367	2.001783	0	0.243702	2.666667	0.00154
8	1.046196	0.152	-0.858824	0.693333	1.030303	10.99444	0.004653	-0.518349	1.04127	0.00121
9	6.594595	4.452899	-0.705202	2.636364	-0.581761	11.33512	0.016358	-0.029557	0.009686	0.00091
10	-0.35436	-0.163636	0.294118	19	-0.293578	14.45455	0	-0.154211	0.222603	0.0007
11	3.583333	0.833335	-0.928344	0.2	2.227758	15.74667	0	-0.117197	0.232925	0.00069
12	-0.524442	0.378045	-0.1875	-0.277778	-0.004484	-0.111111	-0.921206	2.376486	6.179167	0.00048
13	-0.607021	-0.325	0.492386	-0.1375	0.021605	-0.422066	-0.99	0.083978	-0.13856	0.00046
14	-0.339084	0.15625	0.75	-0.928571	-0.791411	-0.959184	-0.837804	-0.031435	3.2748	0.00045
15	5.647059	1.4	-0.927525	0.333333	-0.322785	17.39716	0	0	-0.774545	0.00044
16	0.470588	0.115097	-0.204082	0.307692	-0.3375	0.642998	-0.187951	25.11765	0.295567	0.00041
17	5.576728	0.612903	-0.753846	0.222222	-0.396825	3.965278	0	0	0	0.00036
18	3.01662	0.583333	-0.6	-0.677419	1.582278	-0.193548	0	-0.015574	0.04594	0.00031
19	4.680556	1.037037	-0.581954	2.880597	-0.522807	8.282705	-0.000996	-0.166709	-0.788579	0.00019
20	-0.867144	0.021113	8.077491	-0.444444	-0.440945	-0.938799	0	0	0	0.00016
21	0.079828	-0.051282	0.255319	-0.844444	3.775862	-0.876083	-0.061193	0.20549	0.27141	0.00015
22	3.190328	-0.04557	-0.912338	0.294118	3.022727	13.76253	0	0	0	0.00012
23	-0.177449	-0.918421	-0.016949	-0.9	-0.902439	-0.898276	0	5.046667	-0.814	0.00012
24	-0.774426	0.025	3.515152	-0.625	-0.571429	-0.916946	0	0	0	0.00012
25	3.444444	1.2	0.015464	-0.625	-0.479263	-0.630711	0.023225	-0.435705	-0.72549	0.00011
26	0.22842	-0.5	-0.591304	0.8	-0.57037	3.404255	0.025731	-0.415184	-0.096429	0.00011
27	-0.420881	-0.498912	-0.125	-0.88	-0.705411	-0.862857	0	0	0	0.0001
28	-0.866038	-0.478814	2.884422	1	-0.807808	-0.485123	-0.001059	-0.565063	-0.110185	0.00009

29	-0.101988	0.066667	0.214286	-0.305556	-0.984906	-0.428105	0	0.017437	0	0.00009
30	-0.392857	-0.363636	0.005076	-0.333333	-0.659292	-0.3367	0	-0.603774	0.020541	0.00009
31	-0.208696	0.027023	0.296555	-0.142857	-0.936508	-0.338907	0.011539	-0.144444	0.041071	0.00009
32	-0.243636	-0.507143	-0.458824	-0.5	-0.566038	-0.076087	0	-0.007055	0.048513	0.00008
33	-0.728923	-0.717949	0.042722	-0.395302	-0.298387	-0.420077	0	-0.853143	-0.078395	0.00008
34	0.4862	-0.851053	0.411765	0	-0.77044	-0.291667	-0.537589	-0.233896	0.32108	0.00008
35	-0.649	0.621622	3.664615	-0.739612	-0.313433	-0.944178	0	-0.764225	0.403055	0.00008
36	-0.508892	-0.509091	0	-0.454545	-0.478495	-0.454545	0	-0.207195	-0.218367	0.00008
37	-0.009103	-0.275	-0.267308	-0.6	-0.142857	-0.454068	-0.25466	0.46383	15.41135	0.00008
38	3.090909	4.749996	0.444444	-0.666667	-0.540243	-0.769231	0	-0.023949	0.180398	0.00008
39	0.030928	0.027777	-0.035714	0.454546	-1	0.508418	0	0	0	0.00008
40	-0.685597	-0.407407	0.909091	-0.611111	-0.43299	-0.796296	0.00476	-0.022177	0.045692	0.00008
41	-0.032538	10.07034	-0.190476	0	-0.791252	0.235294	-0.021894	0.023242	0	0.00008
42	-0.322799	-0.203704	0.118033	4	-0.918864	3.472141	0	-0.261317	0.024194	0.00007
43	0.100299	-0.138462	-0.269231	3.647972	-0.676991	5.360383	0	-0.132159	2.226829	0.00007
44	-0.245976	-0.176471	-0.021739	-0.5625	-0.642276	-0.552778	0.036274	-0.329959	-0.426168	0.00007
45	-0.366476	0.037037	0.666667	-0.868143	-0.55	-0.920886	0	0	0	0.00007
46	-0.622579	2.428571	1.181818	-0.36	-0.436141	-0.706667	-0.010862	-0.720714	-0.791444	0.00007
47	-0.585752	-0.549995	0.086174	0.25	-0.381356	0.150828	0.034894	-0.069939	0	0.00007
48	-0.533623	-0.484277	0.101852	0.056678	-0.532374	-0.040998	0.175253	-0.993493	-0.018304	0.00007
49	-0.277376	-0.03681	0.324503	-0.570158	-0.574257	-0.675469	0	0	0	0.00006
50	-0.439289	-0.423077	0.02987	-0.216618	-0.342342	-0.239339	0	-0.941714	-0.04186	0.00006
51	0.635913	-0.25	-0.475504	1	-0.871921	2.813187	0.017778	0.411411	-0.680995	0.00006
52	-0.543603	0.694992	1.542373	0.428571	-0.483755	-0.438095	-0.097976	0.163077	0.47772	0.00006
53	-0.829181	-0.796235	1.45098	-0.7	0.078947	-0.8776	0	0	0	0.00006
54	2.89667	0.119048	-0.711111	-0.5	0.454546	0.730769	0.040532	-0.425294	0.736156	0.00006
55	0.224299	-0.035052	-0.33908	-0.324324	-0.660804	0.022327	-0.080425	0.112377	1.666667	0.00006
56	-0.632234	-0.476298	0.423645	0.201244	-0.229008	-0.15622	0	0	0	0.00006
57	-0.687042	0.018182	1.795658	-0.007692	-0.286765	-0.645054	0	0	0	0.00006
58	-0.285202	-0.334615	-0.069468	0	-0.337662	0.074654	-0.026983	0.096137	0.061841	0.00005
59	-0.606803	-0.674065	0.636842	0.47002	-0.315068	-0.101917	0	-0.445143	0.018301	0.00005
60	-0.338624	0	0.516854	0.009091	-0.520408	-0.334747	0	-0.773144	0.117535	0.00005

61	-0.221064	0.250001	0.376919	0.25	-0.491935	-0.092176	-0.087989	0	0.452685	0.00005
62	-0.541667	-0.416667	0.31579	1.5	-0.361111	0.9	0.000635	-0.0014	0	0.00005
63	-0.270701	-0.523814	-0.343284	-0.4	0.968254	-0.086364	-0.196641	0.187573	0	0.00005
64	-0.315917	0.613734	1.05026	1.166667	-0.705189	0.056777	-0.023006	0.086253	3.436508	0.00005
65	-0.211457	-0.308511	-0.01437	0.923077	-0.384	0.951115	-0.051446	-0.467063	0.031159	0.00005
66	-0.344358	-0.357143	-0.014706	-0.25	-0.201835	-0.238806	0	0.091708	-0.185762	0.00005
67	-0.761041	0	-0.161765	0.964286	2.205357	1.343358	0	-0.499095	0	0.00005
68	-0.521989	3.472368	-0.150289	3	0.256039	3.707483	-0.01171	0.20229	-0.880415	0.00005
69	0.046338	0.131148	0.052632	-0.75	-0.546154	-0.7625	-0.006544	-0.454294	0.971148	0.00005
70	-0.590623	0.019048	0.244565	-0.25	0.266667	-0.39738	0	0.454076	-0.463115	0.00004
71	-0.06993	-0.04	0.022727	-0.172699	-0.376543	-0.191084	-0.047005	0.110503	0.050505	0.00004
72	-0.144712	0.59	0.728	0.05134	-0.611732	-0.391586	0.018308	-0.154815	0.506977	0.00004
73	3.047619	-0.094657	-0.834286	0	0.61062	5.034483	0.227703	-0.758014	-0.233724	0.00004
74	0.416667	-0.4	-0.496	0.666667	-0.379791	2.306878	0	0.000423	-0.000293	0.00004
75	-0.155393	-0.23476	-0.015625	0	-0.307359	0.015873	-0.00076	0.2	0	0.00004
76	0.228623	0.334337	-0.097778	-0.138758	-0.673317	-0.045421	0.000196	-0.191034	0.77	0.00004
77	0.103896	6.391312	5.909091	1.653645	0.090909	-0.61592	0	1.310811	-0.028313	0.00004
78	0.479846	-0.093023	-0.387003	1.895937	-0.470085	3.724226	0	0.04	-0.864	0.00004
79	-0.198257	-0.074074	0.156463	1.173913	-0.401813	0.879795	0	0	0	0.00004
80	-0.533657	0.333333	1.857143	0.25	-0.192308	-0.5625	0	0	0	0.00004
81	-0.358289	0.090917	0.62069	-0.8	0.010989	-0.876596	0.004029	-0.018182	-0.04418	0.00004
82	-0.277736	-0.110169	0.234899	1.5	-0.469697	1.024457	0.071838	-0.552185	0.054321	0.00004
83	-0.343832	0.120688	0.682415	2.45	-0.777778	1.050624	0.092312	-0.007267	-0.27701	0.00004
84	0.008547	-0.056075	-0.065502	0.333333	-0.428571	0.426791	0.015267	0.003158	-0.117775	0.00004
85	1.994012	0.103475	-0.497154	5.7	-0.197183	12.32417	0	-0.036789	0.00379	0.00004
86	-0.764884	-0.180098	2.333333	0.5	0.23718	-0.55	-0.006216	0.015917	-0.064516	0.00003
87	-0.677259	-0.756757	-0.263158	-0.1	2.581081	0.221429	0.000154	0.068966	-0.771626	0.00003
88	0.093458	-0.205479	-0.261905	0.578947	-0.311475	1.139219	0	-0.000749	0.003788	0.00003
89	0.338688	0.274666	-0.061119	0.376	-0.746032	0.465574	-0.00844	0	0.005722	0.00003
90	0.21547	0.777778	0.464516	-0.765152	-0.641791	-0.839641	0	-0.160725	0.317949	0.00003
91	-0.688222	0.033333	2.309249	0.428571	0.729412	-0.568309	-0.157282	-0.235225	-0.000625	0.00003
92	-0.075786	-0.158921	0.113208	0.454546	-0.34127	0.306626	-0.014532	0.03861	0	0.00003

93	0.36962	0.585265	-0.070175	-0.8	-0.649025	-0.784906	0.005637	0.63776	0.123333	0.00003
94	-0.320588	-0.276786	-0.116162	0	0.467533	0.131429	0	0.2841	-0.186441	0.00003
95	-0.457797	7.081488	1.735751	0.142857	-0.40404	-0.582251	0.20022	-0.250575	0	0.00003
96	-0.395802	-0.269231	-0.302564	0	1.804598	0.433824	0	0	0	0.00003
97	2.184713	0.222195	-0.622493	0	0.931507	1.648961	0	0	0	0.00003
98	0.095868	-0.142857	-0.1	0.333333	-0.354037	0.481482	-0.000635	0.001402	0	0.00003
99	0.071958	0.496403	0.370107	1.537791	-0.756579	0.852258	0	-0.4	-0.455882	0.00003
100	-0.069607	0.135135	0.333333	-0.821828	-0.125	-0.866371	0	-0.129293	0.12749	0.00003
101	0.122596	-0.330435	-0.376812	0	-0.095652	0.604651	0.020133	-0.165482	0.928358	0.00003
102	-0.432941	0.307692	1.25	-0.75	0.505376	-0.888889	0	-0.034693	0.017571	0.00003
103	-0.021831	-0.30916	-0.333333	0	0.360544	0.5	-0.061144	0.387984	-0.34968	0.00003
104	0.019573	-0.030303	-0.047619	-0.615385	-0.134146	-0.596154	0	-0.17632	0.055297	0.00003
105	-0.375	0.128571	-0.097276	3.5	0.890052	3.984914	-0.044172	0.075716	-0.009716	0.00003
106	0	-0.253333	3.074468	0	-0.738318	-0.754569	0	0.024286	-0.015455	0.00003
107	-0.027273	-0.0875	-0.07489	0.83871	-0.152778	0.987558	0	-0.005216	0.027237	0.00003
108	0.062315	0.111121	0.044776	0.2	-0.298851	0.148571	0.000275	-0.036217	0.095628	0.00003
109	0.398438	0.080357	-0.226131	0.937985	-0.525773	1.504279	0	-0.099421	0.057013	0.00003
110	0.453515	0.950617	0.236948	0.416667	-0.80786	0.145292	-0.004662	0.010927	4.669725	0.00003
111	-0.040151	-0.040462	0	-0.4	0.019608	-0.4	0	0.009397	-0.007942	0.00002
112	1.813397	-0.687273	-0.889226	-0.038444	2.62069	7.680344	0	-0.628405	0.108172	0.00002
113	-0.127061	0.124512	0.213333	5	-0.615385	3.945055	-0.013615	-0.147619	0.259467	0.00002
114	0.26601	-0.377778	-0.509025	-0.714286	-0.124498	-0.418067	0	-0.330515	0.404688	0.00002
115	0.890052	-0.25	-0.603175	1.214286	0.436364	4.58	-0.004737	-0.036636	0.168539	0.00002
116	-0.23991	-0.940571	0.058824	0	0.438095	-0.055556	0	0	0	0.00002
117	-0.449713	-0.130435	0.575758	0	0.883117	-0.365385	0	0.628331	-0.627451	0.00002
118	-0.387352	0.203125	0.962085	1.391334	0.166667	0.218772	-0.057101	2.078733	-0.573283	0.00002
119	-0.077491	-0.137931	-0.094763	0.25	0.014493	0.380854	0.13082	-0.056244	0	0.00002
120	0.18662	0.05	-0.115385	0.834234	-0.205479	1.073482	0	-0.852941	0.052791	0.00002
121	0.105852	0.149425	0.054054	-0.645161	0.694118	-0.663358	-0.163314	1.058394	-0.017115	0.00002
122	-0.471976	-0.107143	0.457963	0	0.892857	-0.314112	1.279	-0.691492	0.221607	0.00002
123	0.158292	0.056911	-0.089263	2	-0.140625	2.294034	0.000303	0.736771	-0.566077	0.00002
124	3.955556	-0.016129	-0.800873	1	-0.115646	9.04386	0.040008	0.668373	-0.49046	0.00002

157	0.75	0.481818	-0.153271	0.157783	-0.192	0.36736	0	0	0	0.00000
158	0.273319	0.269231	-0.00142	1	0.618182	1.002845	0.00106	-0.256641	0.779377	0.00000
159	1.362283	1.105263	0.544118	0.428571	-0.651639	-0.07483	0.113333	-0.338843	0.008365	0.00000
160	1.089219	-0.195122	-0.614173	0	0.205882	1.591837	0	-0.266266	0.128424	0.00000
161	1.342606	0.246826	-0.464286	-0.125	-0.653846	0.633333	0	-0.007313	0.004785	0.00000
162	1.237687	-0.337666	-0.755814	-0.5	0.230769	1.047619	-0.053286	0.255424	-0.510836	0.00000
163	1.856818	-0.202247	-0.722336	0.8	0.788732	5.482657	0	0	0	0.00000
164	0.694915	0.722772	0.009346	0	0.052632	-0.009259	-0.036541	0.078709	0.053152	0.00000
165	0.717132	2.333333	0.92691	2	-0.310811	0.556897	0	0.05493	-0.897794	0.00000
166	0.262108	3.5	2.465909	-0.428571	1.157549	-0.835129	0	-0.255144	-0.612903	0.00000
167	0.550388	0.46875	0.058065	-0.1	0.414634	-0.14939	0.004089	0	0	0.00000
168	0.798561	0.490566	-0.210084	0.590909	-0.177419	1.014023	0.238084	-0.355579	0.189125	0.00000
169	1.92	1.105263	-0.154506	0.25	-0.145119	0.478426	0	33.80769	1.843509	0.00000
170	1.619048	-0.197675	-0.69863	-0.895611	-0.44127	-0.653618	0	-0.612565	0.035358	0.00000
171	0.657576	0.365854	-0.175523	0	1.1	0.212891	0.015435	-0.001397	0.032727	0.00000
172	0.055807	0	0	-0.1	1.894231	-0.1	0	0	0	0.00000
173	3.069767	0	-0.751678	0.666667	-0.766667	5.711712	0	-0.356722	1.282811	0.00000
174	1.365591	0.753247	-0.270531	0.570819	-0.447619	1.153374	0	-0.018225	0.04192	0.00000
175	-0.296537	0.742852	1.518519	0	-0.10989	-0.602941	0.958984	0.273943	-0.157043	0.00000
176	0.985748	1.004883	0.008876	0.333333	-0.108333	0.321603	0.064912	-0.309198	0.423631	0.00000
177	1.588333	0.342105	-0.442424	1	-0.372449	2.586957	0.085727	-0.259276	0.486239	0.00000
178	1.002088	1.142853	0.24846	0.25	-0.060606	0.001234	0.000664	3.482587	-0.31071	0.00000

Appendix 3.4 OUTLIER TESTING FOR EQUATION 3.2

	PER	MV	EG	DG	SD	DPO	CORP	INDV	FOR	COO_2
1	1.362283	1.105263	0.544118	0.428571	-0.651639	-0.07483	0.113333	-0.338843	0.008365	0.00933
2	3.01662	0.583333	-0.6	-0.677419	1.582278	-0.193548	0	-0.015574	0.04594	0.00728
3	1.002088	1.142853	0.24846	0.25	-0.060606	0.001234	0.000664	3.482587	-0.31071	0.00722
4	-0.339084	0.15625	0.75	-0.928571	-0.791411	-0.959184	-0.837804	-0.031435	3.2748	0.0068
5	0.100299	-0.138462	-0.269231	3.647972	-0.676991	5.360383	0	-0.132159	2.226829	0.00626
6	0.21547	0.777778	0.464516	-0.765152	-0.641791	-0.839641	0	-0.160725	0.317949	0.0061
7	-0.048443	0.753198	-0.064309	0.964895	0.72	1.099939	0	-0.044284	0.055199	0.00606
8	-0.322799	-0.203704	0.118033	4	-0.918864	3.472141	0	-0.261317	0.024194	0.00591
9	-0.315917	0.613734	1.05026	1.166667	-0.705189	0.056777	-0.023006	0.086253	3.436508	0.00573
10	1.793296	0.900004	-0.307143	-0.166667	-0.229508	0.202749	0	0.15501	-0.370324	0.00499
11	5.576728	0.612903	-0.753846	0.222222	-0.396825	3.965278	0	0	0	0.00495
12	0	-0.253333	3.074468	0	-0.738318	-0.754569	0	0.024286	-0.015455	0.00494
13	-0.543603	0.694992	1.542373	0.428571	-0.483755	-0.438095	-0.097976	0.163077	0.47772	0.00457
14	0.985748	1.004883	0.008876	0.333333	-0.108333	0.321603	0.064912	-0.309198	0.423631	0.00449
15	0.22842	-0.5	-0.591304	0.8	-0.57037	3.404255	0.025731	-0.415184	-0.096429	0.00445
16	-0.728923	-0.717949	0.042722	-0.395302	-0.298387	-0.420077	0	-0.853143	-0.078395	0.00419
17	-0.607021	-0.325	0.492386	-0.1375	0.021605	-0.422066	-0.99	0.083978	-0.13856	0.00416
18	-0.420881	-0.498912	-0.125	-0.88	-0.705411	-0.862857	0	0	0	0.00409
19	0.055807	0	0	-0.1	1.894231	-0.1	0	0	0	0.00397
20	0.36962	0.585265	-0.070175	-0.8	-0.649025	-0.784906	0.005637	0.63776	0.123333	0.00394
21	1.994012	0.103475	-0.497154	5.7	-0.197183	12.32417	0	-0.036789	0.00379	0.00386
22	-0.188136	0.750004	1.154867	0.333333	0.007634	-0.381246	0.001729	-0.91905	0.040826	0.0038
23	-0.533623	-0.484277	0.101852	0.056678	-0.532374	-0.040998	0.175253	-0.993493	-0.018304	0.00378
24	1.856818	-0.202247	-0.722336	0.8	0.788732	5.482657	0	0	0	0.00371
25	0.666495	0.845873	0	0.5	-0.210526	0.5	-0.105734	0.243967	-0.106011	0.00367
26	-0.243636	-0.507143	-0.458824	-0.5	-0.566038	-0.076087	0	-0.007055	0.048513	0.00353
27	3.047619	-0.094657	-0.834286	0	0.610619	5.034483	0.227703	-0.758014	-0.233724	0.00342
28	-0.606803	-0.674065	0.636842	0.47002	-0.315068	-0.101917	0	-0.445143	0.018301	0.0033
29	-0.764884	-0.180098	2.333333	0.5	0.237179	-0.55	-0.006216	0.015917	-0.064516	0.00311
30	1.046196	0.152	-0.858824	0.693333	1.030303	10.99444	0.004652	-0.518349	1.04127	0.00295

31	0.470588	0.115096	-0.204082	0.307692	-0.3375	0.642998	-0.187951	25.11765	0.295567	0.0029
32	1.80236	0.5	-0.555556	-0.28	0.900662	0.62	-0.147174	-0.86201	0.793388	0.00285
33	-0.541667	-0.416667	0.315789	1.5	-0.361111	0.9	0.000635	-0.0014	0	0.00283
34	1.365591	0.753247	-0.270531	0.570819	-0.447619	1.153374	0	-0.018225	0.04192	0.00277
35	0.071958	0.496403	0.370107	1.537791	-0.756579	0.852258	0	-0.4	-0.455882	0.00276
36	-0.508892	-0.509091	0	-0.454545	-0.478495	-0.454545	0	-0.207195	-0.218367	0.00262
37	3.955556	-0.016129	-0.800873	1	-0.115646	9.04386	0.040008	0.668373	-0.49046	0.00252
38	0.890052	-0.25	-0.603175	1.214286	0.436364	4.58	-0.004737	-0.036636	0.168539	0.00246
39	0.457195	0.67181	0.148387	0.2	-0.257862	0.044944	-0.136349	-0.225522	0.388494	0.00223
40	0.694915	0.722772	0.009346	0	0.052632	-0.009259	-0.036541	0.078709	0.053152	0.0022
41	0.26601	-0.377778	-0.509025	-0.714286	-0.124498	-0.418067	0	-0.330515	0.404688	0.00217
42	-0.585752	-0.549995	0.086174	0.25	-0.381356	0.150828	0.034894	-0.069939	0	0.00216
43	-0.685597	-0.407407	0.909091	-0.611111	-0.43299	-0.796296	0.00476	-0.022177	0.045692	0.00213
44	1.237687	-0.337666	-0.755814	-0.5	0.230769	1.047619	-0.053286	0.255424	-0.510836	0.00206
45	-0.144712	0.59	0.728	0.05134	-0.611732	-0.391586	0.018308	-0.154815	0.506977	0.00193
46	1.430962	-0.13	-0.647619	0.878788	-0.241071	4.331695	0.226415	-0.64042	0.038835	0.00189
47	2.030303	0.548224	-0.47619	0	-0.4125	0.909091	0.011256	-0.028749	0	0.00182
48	-0.449713	-0.130435	0.575758	0	0.883117	-0.365385	0	0.628331	-0.627451	0.00178
49	0.830065	0.638554	-0.118894	0	-0.326923	0.134937	0	1.162917	0.135424	0.00173
50	0.416667	-0.4	-0.496	0.666667	-0.379791	2.306878	0	0.000423	-0.000293	0.00173
51	-0.320588	-0.276786	-0.116162	0	0.467532	0.131429	0	0.2841	-0.186441	0.00166
52	-0.38	-0.093023	0.542522	0.5	0.7	-0.027567	0.097665	-0.153482	0.038583	0.00158
53	-0.632234	-0.476298	0.423645	0.201244	-0.229008	-0.15622	0	0	0	0.00153
54	-0.392857	-0.363636	0.005076	-0.333333	-0.659292	-0.3367	0	-0.603774	0.020541	0.00153
55	-0.021831	-0.30916	-0.333333	0	0.360544	0.5	-0.061144	0.387984	-0.34968	0.00151
56	0.635913	-0.25	-0.475504	1	-0.871921	2.813187	0.017778	0.411411	-0.680995	0.00148
57	-0.439289	-0.423077	0.02987	-0.216618	-0.342342	-0.239339	0	-0.941714	-0.04186	0.00147
58	81.06331	-0.275862	-0.117647	-0.625	-0.868263	-0.575	-0.86843	3.68082	0.812481	0.00142
59	0.122596	-0.330435	-0.376812	0	-0.095652	0.604651	0.020133	-0.165482	0.928358	0.0014
60	0.798561	0.490566	-0.210084	0.590909	-0.177419	1.014023	0.238083	-0.355579	0.189125	0.00138
61	0.488834	0.566667	0.077957	0.2	-0.339286	0.113217	0	0	0	0.0012
62	-0.344358	-0.357143	-0.014706	-0.25	-0.201835	-0.238806	0	0.091708	-0.185762	0.00111
63	0.550388	0.46875	0.058065	-0.1	0.414634	-0.14939	0.004089	0	0	0.0011

64	-0.211457	-0.308511	-0.01437	0.923077	-0.384	0.951115	-0.051446	-0.467063	0.031159	0.00093
65	1.257636	0.208333	-0.479167	-0.858268	-0.813433	-0.727874	0	1.04127	-0.510109	0.00092
66	-0.285202	-0.334615	-0.069468	0	-0.337662	0.074654	-0.026983	0.096137	0.061841	0.00086
67	0.657576	0.365854	-0.175523	0	1.1	0.212891	0.015434	-0.001397	0.032727	0.00085
68	1.619048	-0.197675	-0.69863	-0.895611	-0.44127	-0.653618	0	-0.612565	0.035358	0.00081
69	0.75	0.481818	-0.153271	0.157783	-0.192	0.36736	0	0	0	0.0008
70	1.089219	-0.195122	-0.614173	0	0.205882	1.591837	0	-0.266266	0.128424	0.00075
71	-0.375	0.128571	-0.097276	3.5	0.890052	3.984914	-0.044172	0.075716	-0.009716	0.00072
72	-0.533657	0.333333	1.857143	0.25	-0.192308	-0.5625	0	0	0	0.00069
73	0.228623	0.334337	-0.097778	-0.138758	-0.673317	-0.045421	0.000196	-0.191034	0.77	0.00067
74	3.069767	0	-0.751678	0.666667	-0.766667	5.711712	0	-0.356722	1.282811	0.00063
75	0.362862	0.430303	0.019915	0.333333	-0.393258	0.307299	0.000302	-0.631109	0.807951	0.00063
76	-0.077491	-0.137931	-0.094763	0.25	0.014493	0.380854	0.13082	-0.056244	0	0.0006
77	-0.688222	0.033333	2.309249	0.428571	0.729412	-0.568309	-0.157282	-0.235225	-0.000625	0.0006
78	-0.277736	-0.110169	0.234899	1.5	-0.469697	1.024457	0.071838	-0.552185	0.054321	0.00053
79	-0.245976	-0.176471	-0.021739	-0.5625	-0.642276	-0.552778	0.036274	-0.329959	-0.426168	0.00051
80	-0.155393	-0.23476	-0.015625	0	-0.307359	0.015873	-0.00076	0.2	0	0.00051
81	0.479846	-0.093023	-0.387003	1.895937	-0.470085	3.724226	0	0.04	-0.864	0.00049
82	1.342606	0.246826	-0.464286	-0.125	-0.653846	0.633333	0	-0.007313	0.004785	0.00046
83	-0.432941	0.307692	1.25	-0.75	0.505376	-0.888889	0	-0.034693	0.017571	0.00046
84	0.338688	0.274666	-0.061119	0.376	-0.746032	0.465574	-0.00844	0	0.005722	0.00045
85	0.093458	-0.205479	-0.261905	0.578947	-0.311475	1.139219	0	-0.000749	0.003788	0.00045
86	-0.774426	0.025	3.515152	-0.625	-0.571429	-0.916946	0	0	0	0.00038
87	0.578354	0.35	-0.172949	0.25	0.16129	0.511394	-0.051874	0.048899	0.086957	0.00038
88	1.588333	0.342105	-0.442424	1	-0.372449	2.586957	0.085727	-0.259276	0.486239	0.00038
89	9.324022	0.157027	-0.88843	0	0.978261	7.962963	-0.489531	-0.215036	0.1863	0.00028
90	-0.075786	-0.158921	0.113208	0.454545	-0.34127	0.306626	-0.014532	0.03861	0	0.00027
91	0.095868	-0.142857	-0.1	0.333333	-0.354037	0.481481	-0.000635	0.001402	0	0.00025
92	-0.042003	0.107143	0.140351	0.285714	1.135593	0.127473	0.022887	-0.123998	0.039427	0.00024
93	0.023904	-0.051724	-0.074394	0.424679	0.237624	0.539186	0	0	0	0.00022
94	-0.221064	0.250001	0.376919	0.25	-0.491935	-0.092176	-0.087989	0	0.452685	0.00021
95	-0.198257	-0.074074	0.156463	1.173913	-0.401813	0.879795	0	0	0	0.00021
96	-0.027273	-0.0875	-0.07489	0.83871	-0.152778	0.987558	0	-0.005216	0.027237	0.0002

97	0.224299	-0.035052	-0.33908	-0.324324	-0.660804	0.022327	-0.080425	0.112377	1.666667	0.00014
98	-0.040151	-0.040462	0	-0.4	0.019608	-0.4	0	0.009397	-0.007942	0.00011
99	0.273319	0.269231	-0.00142	1	0.618182	1.002845	0.00106	-0.256641	0.779376	0.00011
100	-0.387352	0.203125	0.962085	1.391334	0.166667	0.218772	-0.057101	2.078733	-0.573283	0.00011
101	-0.687042	0.018182	1.795658	-0.007692	-0.286765	-0.645054	0	0	0	0.0001
102	0.008547	-0.056075	-0.065502	0.333333	-0.428571	0.426791	0.015267	0.003158	-0.117775	0.00009
103	0.019573	-0.030303	-0.047619	-0.615385	-0.134146	-0.596154	0	-0.17632	0.055297	0.00008
104	0.405622	0.209459	-0.156334	4.6	-0.323529	5.6377	0	-0.04624	0.070686	0.00008
105	-0.127061	0.124512	0.213333	5	-0.615385	3.945055	-0.013615	-0.147619	0.259467	0.00007
106	1.061818	0.1625	-0.635739	-0.396722	1.593023	0.656168	0	0.284483	-0.321168	0.00007
107	-0.277376	-0.03681	0.324503	-0.570158	-0.574257	-0.675469	0	0	0	0.00006
108	-0.590623	0.019048	0.244565	-0.25	0.266667	-0.39738	0	0.454076	-0.463115	0.00006
109	0.791667	0.185185	-0.337607	1	-0.345745	2.019355	-0.004229	0.000608	0	0.00005
110	-0.06993	-0.04	0.022727	-0.172699	-0.376543	-0.191084	-0.047005	0.110503	0.050505	0.00005
111	0.158291	0.056911	-0.089263	2	-0.140625	2.294034	0.000303	0.736771	-0.566077	0.00005
112	0.046338	0.131148	0.052632	-0.75	-0.546154	-0.7625	-0.006544	-0.454294	0.971148	0.00005
113	2.184713	0.222195	-0.622493	0	0.931507	1.648961	0	0	0	0.00004
114	0.105852	0.149425	0.054054	-0.645161	0.694118	-0.663358	-0.163314	1.058394	-0.017115	0.00004
115	-0.101988	0.066667	0.214286	-0.305556	-0.984906	-0.428105	0	0.017437	0	0.00004
116	0.674641	0.128002	-0.307918	0.3	-0.46729	0.87839	-0.011852	0.036827	-0.004049	0.00003
117	-0.069607	0.135135	0.333333	-0.821828	-0.125	-0.866371	0	-0.129293	0.12749	0.00003
118	-0.338624	0	0.516854	0.009091	-0.520408	-0.334747	0	-0.773144	0.117535	0.00002
119	2.89667	0.119048	-0.711111	-0.5	0.454545	0.730769	0.040532	-0.425294	0.736156	0.00001
120	0.18662	0.05	-0.115385	0.834234	-0.205479	1.073482	0	-0.852941	0.052791	0.00001
121	-0.343832	0.120688	0.682415	2.45	-0.777778	1.050624	0.092312	-0.007267	-0.27701	0.00001
122	0.365188	0.060979	-0.149286	0	-0.068966	0.175483	0	0	0	0.00000
123	0.062315	0.111121	0.044776	0.2	-0.298851	0.148571	0.000275	-0.036217	0.095628	0.00000
124	1.618182	0.125	-0.513514	2.333333	-0.432024	5.851852	0	0	0	0.00000
125	-0.366476	0.037037	0.666667	-0.868143	-0.55	-0.920886	0	0	0	0.00000
126	0.398438	0.080357	-0.226131	0.937984	-0.525773	1.504279	0	-0.099421	0.057013	0.00000
127	-0.208696	0.027023	0.296555	-0.142857	-0.936508	-0.338907	0.011538	-0.144444	0.041071	0.00000
128	0.030928	0.027777	-0.035714	0.454545	-1	0.508418	0	0	0	0.00000
129	-0.358289	0.090917	0.62069	-0.8	0.010989	-0.876596	0.004029	-0.018182	-0.04418	0.00000

Figure 1 HETEROCEDASTICITY TESTING OF EQUATION 3.1

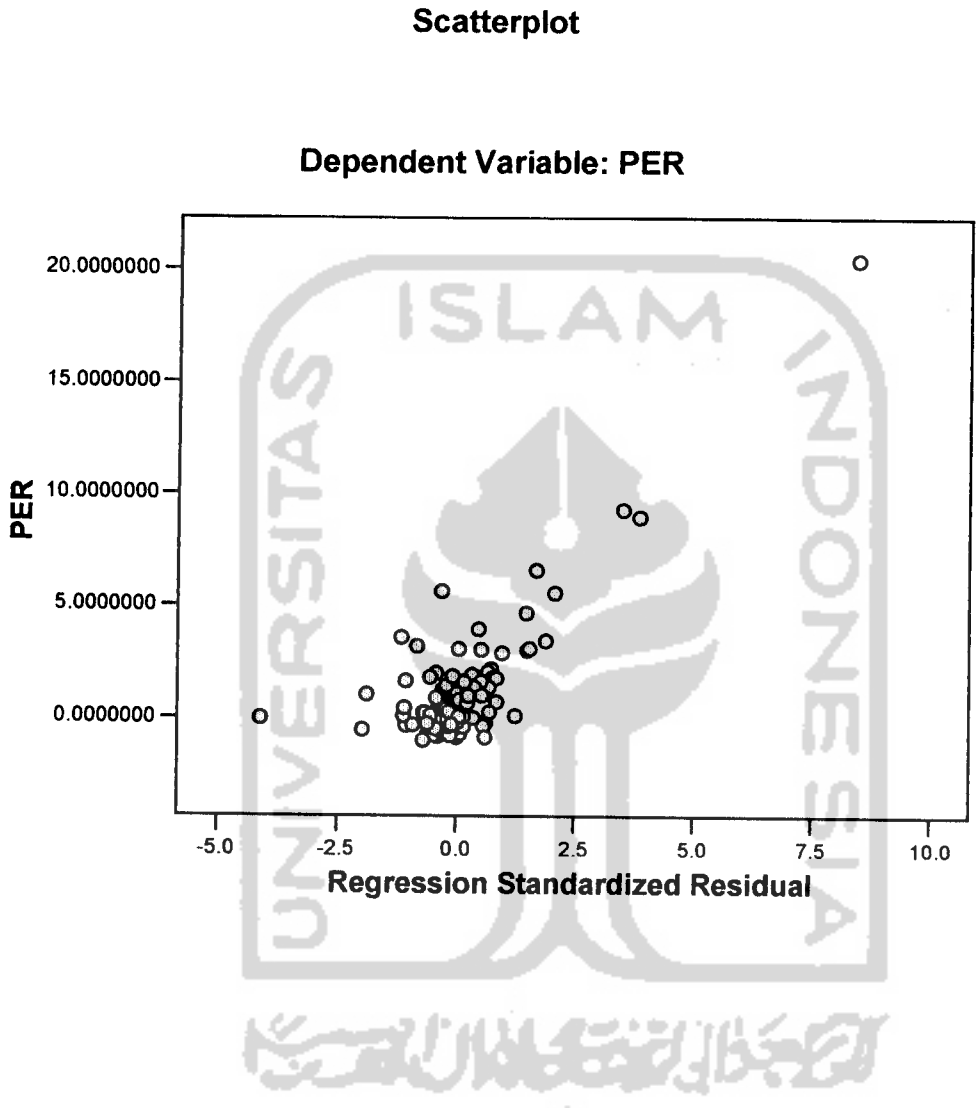


Figure 2 HETEROCEDASTICITY TESTING OF EQUATION 3.2

