

**ASSOCIATION OF INVESTMENT OPPORTUNITY SET, STOCK PRICE,  
AND COMPANY PROFIT ON LQ 45 COMPANY**

**A THESIS**

**Presented as Partial Fulfillment of the Requirements**

**To Obtain the Bachelor Degree in Management Department**



**By:**

**ILMI MISWAR**

**Student Number: 03311034**

**FACULTY OF ECONOMICS**

**DEPARTMENT OF MANAGEMENT**

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**YOGYAKARTA**

**2007**

**ASSOCIATION OF INVESTMENT OPPORTUNITY SET, STOCK PRICE,  
AND COMPANY PROFIT ON LQ 45 COMPANY**

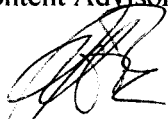
By

**ILMI MISWAR**

Student Number: 03311034

Approved by

Content Advisor,



Abdul Mo'in, SE, MBA

June 12<sup>th</sup>, 2007

Language Advisor



Nihlah Ilhami, S.P.d

June 12<sup>th</sup>, 2007

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Defended before the Board of Examiner

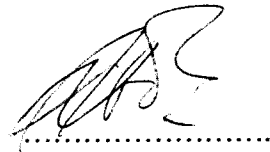
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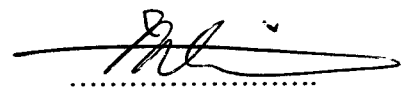
Examiner 1

Abdul Mo'in ,SE.,MBA.



Examiner 2

Zaenal Arifin Dr.,Drs.,M.Si



Yogyakarta, June 28<sup>th</sup>, 2007

International Program

Faculty of Economics

Islamic University of Indonesia

Dean



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

## **DECLARATION OF AUTHENTICITY**

Herein I declare the originality of this thesis; I have not presented anyone else's work to obtain my university degree, nor have I presented else's words, ideas or expression without acknowledgement. All quotations are cited and listed in the bibliography of this thesis.

If in the future this statement is proven to be false, I am willing to accept any sanction complying with the determined regulation for its consequence

Yogyakarta, June 13<sup>th</sup> 2007

Ilmi Miswar

*DEDICATED TO:*

everyone h

*ALMIGHTY ALLAH FOR ALL BLESSING*

*MY PARENTS, MY SISTER, AND MY BROTHER*

*FOR THE SUPPORT, LOVE, AND GUIDANCE*

## MOTTO

*“Everyone has a dream, but before it comes true, we should pass the exam and be patient”*

*“Dream, Love, and Life”*

*Simple, but amazing... there is in everybody soul if we believe.*

*(Kaver’s reflection)*

*Goals are like stars, will not be achieved by hand,*

*Be a man in the middle of sea,*

*That is use star as the guidance,*

*Follow it, you will find your way.*

*(Carl Schutz)*

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In the name of Allah the most merciful, who has given an ease and patience to the writer in writing and finishing this thesis. Thank you; I might not able to write this thesis without your guidance, mercy, and blessing. May we always be in his care. Amen.

I do realize that this thesis “**ASSOCIATION OF INVESTMENT OPPORTUNITY SET, STOCK PRICE, AND COMPANY PROFIT ON LQ 45 COMPANY**” Is far from perfect, but hopefully this thesis can be useful.

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*Alhamdulillahirabbil' alamin*

Yogyakarta,

Ilmi Miswar



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## ABSTRACT

This study develops and makes composite observed variables from Investment opportunity set (IOS) variables, company profit variable (*Return on Assets*), and stock price variable (*Cumulative Abnormal Return*).

Growth firms and non growth firms are determined as IOS proxy by using five variables. Those five variables are: market to book value of equity (MVEBVE), ratio of firm to book value (VPPE), CAPBVA, price earning ratio, and market to book value of assets (MVABVA). Those variables are analyzed by using *common factor analysis*. From the results of analysis, the researcher determines 6 companies as growth firms and 6 companies as non growth firms from 15 companies which are listed on LQ 45 Index from 2001 until 2005.

The result of analysis shows that CAR of Growth Company is lower than Non-Growth Firm. This case is different from the previous study that supports CAR of Growth Company which is bigger than CAR of Non-Growth Company. Result of *multivariate* test shows that coefficient of dummy variable and t-value is insignificant. This means that stock price changing of growth firms and non-growth firms in around time of financial report announcement is not different.

The other result of analysis shows that ROA of Growth Company is bigger than Non-Growth Firm. This case is not different from the previous finding stated that ROA of Growth Company will be bigger than ROA Non-Growth Company. Result of *multivariate* test shows that the coefficient of dummy variable and t-value is significant. This fact supports the previous study stated that *Return on Assets* (ROA) of Growth Company will be higher than Non-Growth Company.



## ABSTRAKSI

Penelitian ini bertujuan untuk menggabungkan variabel-variabel dari investment opportunity set (IOS), variabel profit perusahaan (*Return on Assets*), dan variabel harga saham (*Cumulative Abnormal Return*).

Perusahaan tumbuh dan tidak tumbuh ditetapkan sebagai proksi IOS dengan menggunakan lima variabel. Kelima variabel tersebut meliputi: market to book value of equity (MVEBVE), ratio of firm to book value (VPPE), CAPBVA, price earning ratio, and market to book value of assets (MVABVA). Kelima variabel tersebut dianalisis menggunakan *common factor analysis*. Hasil analisis menetapkan 6 perusahaan sebagai perusahaan tumbuh dan 6 sebagai perusahaan tidak tumbuh dari 15 perusahaan yang terdaftar di indeks LQ 45 sejak tahun 2001 sampai tahun 2005.

Hasil penelitian menunjukkan bahwa CAR dari perusahaan tumbuh lebih rendah dari perusahaan tidak tumbuh. Hal ini berbeda dari penelitian sebelumnya yaitu CAR dari perusahaan tumbuh lebih tinggi dari perusahaan tidak tumbuh. Hasil dari tes *multivariate* menunjukkan koefisien dari variable dummy dan nilai-t tidak signifikan. Hal ini berarti perubahan harga saham antara perusahaan tumbuh dan tidak tumbuh di sekitar waktu pengumuman laporan keuangan tidak berbeda.

Hasil lain dari analisis menunjukkan bahwa ROA perusahaan tumbuh lebih besar dari perusahaan tidak tumbuh. Hal ini tidak berbeda dari temuan sebelumnya yaitu ROA perusahaan tumbuh lebih tinggi dari perusahaan tidak tumbuh. Hasil dari *multivariate* menunjukkan koefisien variabel dummy dan nilai-t signifikan. Fakta ini mendukung studi sebelumnya yang menyatakan bahwa ROA perusahaan tumbuh lebih tinggi dari perusahaan tidak tumbuh.

# CHAPTER I

## INTRODUCTION

### **1.1. Background of the Study**

Research in accounting and financial field has experienced the fast growth, especially in stock market scope. Some researches have been done to examine: the contain of information and the effect of financial information to the stock price, profit (ROA), etc., and the other variables that are always related to the stock price movement and profitability. Majority of those researches is to test the efficiency of capital markets. But, there is only a few of researches that is associated to company capital structure, especially related to investment.

A large amount of funding in investment is needed by most of developing countries. In fact, the development of the country depends on its capability besides other resources as the components. Foreign loans as outside resources cannot be implemented to the whole development. Because of this weakness, it needs a huge effort to direct funding investment which comes from inside of the country as resources which consist of society savings, government savings and the foreign received.

Fuller (1987; 52) has identified investments as postponed consumption. According to Frank and Keith (2005; 5) investment is defined as the current commitment of Dollar (money) for a certain period of time in order to derive

future payments that will be compensated with the investor when the fund is committed, expected rate of inflation, and the uncertainty of the future payments.

Investment Opportunity Set plays important role in many corporate decisions, especially about financial. For example, the mix of assets in place and investment opportunities affect a firm's capital structure, the maturity and covenant structure of its debt contracts, a firm's dividend policy, its compensation contracts, and its financial contracts. Not surprisingly, measures of a firm's investment opportunity set feature prominently in empirical corporate financial literature. A common practice is to rely on proxy variables to measure a firm's investment opportunity set since investment opportunities are typically unobservable to outsiders. But little is known about how well these proxy variables perform, which, according to Baker (1993), is one of fundamental problems in empirical corporate culture.

Association between IOS and management is showed by the company value growth that is managed by the management itself. Kallapur and Trombley (1999), realization of the company growth is showed in growth book assets value, and book company value. IOS value of a company influences company policy decisions, such as financing policy, dividend policy, and compensation policy.

Meanwhile, Kallapur and Trombley (1999) were evaluating some proxies for IOS based on the relationship to realize growth. The result is in average, investment opportunity set aims to realize investment and will affect realized growth in three until five periods. By using realized growth as *benchmark*,

Kallapur and Trombley find that *book-to-market ratio* is valid proxy about growth.

The-Market-to-Book assets-Ratio has the highest information content with respect to investment opportunities and it is least affected by other factors. Even though Market-to-Book assets-Ratio appears to be the best proxy among the variables examined, it explains at best only 40% of the variation in the values of firms' investment opportunities.

This research is done to continue the existing research or *extended replication*, which uses pooled data to investigate the impact of IOS to stock price changing, company profit, and corporate governance on LQ 45 Index company in the Jakarta Stock Exchange. The difference of stock price between Growth company and Non-growth Company in the period of financial report announcement of company, and also the *Cumulative Abnormal Return* becomes the indicator for investor or company to do investment.

Growth of company is a wish that becomes big desire of two parties, those are: internal party of company that is management of the company itself and external party that consists of government and investor or creditor. This growth is hoped to become positive aspects toward company such as an investment opportunity in the company. Growth company prospect toward investor is a profitable prospect, because the invested investment will hopefully give high return and can encourage the company profit. Smith and Watts (1992) company growth opportunity is viewed on investment opportunity that proxy with several

kinds of investment opportunity set value combination. Searby (1975) said that the failure of company to keep the investment profit level above of capital cost will bring the company to financial difficulties and threat the company bankruptcy.

*Return on Assets* is the tools that are used to measure the company performance frequently (Certo and Peter, 1995) in context of strategic management. Company performance in the end of period should be evaluated to find out the company development. Evaluating process needs certain standard as the basic comparison. The comparison could be from internal or external. In this research, the comparison will come from external company, such as growth ratio and profitability ratio.

According to some above researches, it can be summarized that it is very important to value a company whether the company is growth or non-growth. But only a few of investment opportunity set (IOS) research uses IOS variables/proxies relating to variables of stock price that use proxy *Cumulative Abnormal Return* and company profit that use proxy *Return on Assets*.

Furthermore, the researcher will explain about the writing structure of this study. In chapter II, the researcher will explain about Investment Opportunity Set (IOS) concept, theory of stock price, theory of company profit, theoretical framework, and hypothesis formulation based on previous studies. In chapter III, the researcher will explain about research method, research subject, research setting, research instruments, research variables, research procedures, and

technique of data analysis. In chapter IV, the researcher will explain about research findings, discussion, and implications. And, in chapter V will explain about this research's conclusions.

## **1.2. Problem Identification**

Investment opportunity set is an indicator for measuring Growth Company and Non-growth Company in many sectors including in the stock market. For investor (individual or company), investment opportunity set is a variable that can be related to many variables in measuring company performance. Application of investment opportunity set as the investment barometer can be related to stock price changing, and company profit.

## **1.3. Problem Formulation**

The formula of this research can be formulated as follows:

1. What the impact of company classification (Growth Company and Non-growth Company) on the stock price of the company on market?
2. What the impact of company classification (Growth Company and Non-Growth Company) on the company profit?
3. What is the impact of stock price (Cumulative Abnormal Return) and company profit (Return on Assets) to Investment Opportunity Set)?

#### **1.4. Problem Limitation**

Problem limitations in this research can be explained as follows:

1. This research will focus on companies that has listed on the Jakarta Stock Exchange and including on LQ 45 Index from year 2001 until 2005, consistently;
2. The companies has announced annual financial report starting from year 2001 and publish the annual financial report, consistently;
3. This research will only focus on Return on Assets (ROA) to answer the company profit and Abnormal Return or Cumulative Abnormal return (CAR) to answer company stock price.

#### **1.5. Research Objectives**

The objectives of this research are to examine the impact and the relationship of Investment Opportunity Set as one of measurement indicators in investing on company that including on LQ 45 Index. Furthermore, this study will examine what the impact and relationship of Investment Opportunity Set (IOS) to stock price changing (*Cumulative Abnormal Return*) and company profit (*Return on Assets*)

#### **1.6. Research Contributions**

This research is expected can add the information about financial in stock market, especially in investment related to topic of investment opportunity set.

Although this research takes companies on LQ 45 Index as the sample, it is expected the result can be used for other sectors, not only on LQ 45 index.

Furthermore, the results of this research are expected to give more explanation and information about the impact and the relationship of Investment opportunity set to stock price and company profit. Therefore, it can be one of some measurements or barometers in doing investment in stock market, not only for the company, also for individual investor.

### **1.7. Definition of Terms**

- 1.7.1. ***Investment Opportunity Set*** is the value of a firm as the total of the value of assets in place and the value of options to make future discretionary investments in positive NPV projects
- 1.7.2. ***Return on Assets*** is the relationship of annual after tax *earnings* to total assets (average or ending balance), used as a measure of the productivity of the assets a company employs to generate the earnings. At times after tax earnings are adjusted for interest to eliminate the impact of *financing*.
- 1.7.3. ***Abnormal Return*** is the spread between actual return and expected return that can be happened before the information is announced or have been leakage of information after the information is announced.



## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### 2.1. Theoretical Review

##### 2.1.1. Investment Opportunity Set

Investment Opportunity Set or IOS is available for investment alternatives in the future for a company (Hartono 1999). IOS is present value of company options for investment in the future period (Myers 1977, in Chung & Charoenwong 1991). The component of firm value resulting from options to make future investments has been referred to by Myers (1977), Smith and Watts (1992), and others as the investment opportunity set, or IOS

According to Myers, the fundamental difference is that the value of growth opportunities depends, at least in part, on future discretionary investments, while the value of assets in place does not (Myers, 1977 p.155). Given the discretionary nature of investments associated with growth opportunities, they are best regarded and valued as options on real assets, and therefore are also referred to as *real options*. The options' exercise prices represent the future investments needed to acquire the assets.

It is important to distinguish between IOS and growth. As commonly used, the term growth refers to the ability of the firm to increase in the size, while investment opportunities are options to invest in positive net present value projects. While some investment opportunities also result in increases in the size of the company, not all growth opportunities have positive NPV. The

firm may often have opportunities to grow which have no potential to increase the market to value of the company. The most obvious example is conglomerate acquisition characterized by an absence of synergies leading to increased revenue or cost-saving opportunities. Investment of available cash in such acquisitions increases the size of the firm without increasing its value (Jensen, 1986). Accordingly, the ability of the firm to engage in such acquisitions is not a component of the IOS and will not be assigned a positive value by rational markets. Another example is the use of firm's use of capital. While this type of investment may increase sales and profits, it has no effect on the value of the firm adjusted for the new equity capital.<sup>1</sup> Conversely, profit able growth that needs no future discretionary expenditure is priced positively by the market, but is not a component of the IOS.

Due to Investment Opportunity Set of company itself consists of projects that give growth to the company, therefore Investment Opportunity Set could be a though as company growth prospect. Thus, it could be said that Investment Opportunity Set is a thing that is unobservable. Hence, we need some proxies to explain correlation between one variable and other variables.

Gaver & Gaver (1993) explain that *market to book of equity*, *market to book of assets*, *earning per-share to price*, *research & development to total*

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<sup>1</sup> To see this more clearly, consider an abnormal ROE model, where the market-to-book ratio depends on discounted abnormal ROE and book value growth (e.g. Ohlson, 1995 and Penman and Sougiannas, 1998). Additional investment of new equity capital increases equity and book value, but decreases abnormal ROE, so that the value of the firm increases only by the amount of the new equity.

*asset, variance of total return and funds* have significant correlation with one IOS general factor result of factor analysis. Research result of Sami et. al. (1999) show variables that owned high correlation with IOS general factor which are MVABVA, MVE/BE, PPE/BVA, *Capital Expenditure Committed/BVA*, CAPX *Incurred/BVA* and DEP/BVA, while EPS/*price* and VARSALE (*variance of sale*) have little correlation coefficient, thus they can not be used as IOS proxy. The using of IOS proxy, because IOS is unobservable or IOS is dummy variable, thus unobservable variable tend to be imperfect if it is measured with only one single factor, therefore it is needed a proxy which is an ensemble of variables.

### **2.1.2. Stock Price Theory**

Stock price is what an investor will pay to buy shares of stock in company. If an investor has bought shares as \$10 each and now sells the shares for \$100 each, that investor has clearly made money. Stock prices follow the law of supply and demand. If demand goes up and the supply does not match the demand, the price will increase. Over history, investors have numerous occasions created demands for an item that has outrageously inflated its price.

Every market analysis would like to find a consistent indicator of stock prices, generally if the indicator is unknown by other analysts. Such a barometer would be a single economics series such as building permits,

money supply figures, consumer price index, employment, retail sales, inventories, or industrial production that would move in advance of the stock cycle and thus forecast changes in stock cycle. Even if the stock cycle concept itself has any long-term value, there is not evidence that there is any reliable barometer that predicts it (Toweles, Bradley and Towele, 1992).

Although a wide variety of factors can influence the price of a stock, according to Marina Mazzucato in her article, it can be specified into two:

- The financial performance of a company
- The perception of investors as to the potential future cost of buying shares.

A company with good financial performance will be growing in size, growing in assets, and earning increasingly more money. As the company grows, the value of an individual share of that company will increase. However, current financial performance is not always a good indicator of future value. For example, a single dramatic event such as explosion might completely wipe out the value of shares of a small but growing concern.

On the other hand, poor financial performance is also not always a good indicator of future value. Consider an imaginary company called Joe's Biotech 2000 that has lost money for each of three last years. Joe announces a surprise discovery that cures migraine headache. The future potential of Joe's

company has just shot up and so will the stock price, even though Joe has yet to make a penny.

There are some theories of stock prices that are commonly used by investors in analyzing the movement of stock prices in market, such as the conventional theory of stock prices, the confidence theory of stock prices, and random walk theory.

#### 1. The Conventional Theory of Stock Prices

*“The Basic cause of stock process movement is the anticipation of change in corporate earnings.”*

According to the conventional theory, the expected result is all changes in fundamental affect the earnings of corporations either individually or as group. These changes in earnings will in turn affect dividends. Subscribe to this theory, it is recognized that the stock price is the present value of all anticipated future dividends. Changes in earnings will change the outlook for dividends and therefore justifiably affect prices of stock. Any conditions that indicate a change will affect stock prices, which will usually move in advance of actual changes in earnings and dividends.

#### 2. The Confidence Theory of Stock Prices

*“The basic factor in the movement of stock prices is the rise and fall of trader and investor confidence in the future of stock prices, earnings and dividends.”*

The theory is based on the premise that designs on buying and selling are made on the basis developed rules and standards, such as that stocks should carry certain yields as compared to bond yields, when fundamental conditions were favorable, stock prices should move upward in accordance with well-discounted changes in earnings and dividends. When condition turned unfavorable, stock prices would move downward in accordance with scientific discounting of the confidence.

According to the confidence theory, if a sufficient number of traders and investors become optimistic about fundamental conditions or about prospects for an individual company, they will buy stocks. If they become overoptimistic, they will buy stocks until prices reach unwarranted levels, as measured by normal of prices, earnings and dividends. On the opposite side, when they become pessimism, they will sell, regardless of basic and fundamentals conditions. If their pessimism become excessive, they will dump stocks on the market until they fall to entirely unrealistic as measured by normal standards.

The difficulty of measuring public confidence in the market increases the complexity of stock market analysis. Many traders on technical conditions who attempt to measure confidence by various

methods often achieve less than perfect result. Many investors still follow faithfully the conventional theory

### 3. Random Walk Theory

The result of research that is done by Maurice Kendall in year 1953<sup>2</sup> said that the design of stock prices can be unpredictable, because the movement is random walk.

Stock prices is random walk, meaning to say that fluctuation of stock prices depends on new information that will be accepted by the investors, but new information cannot be predicted when will be accepted and thus the stock price is unpredictable. Whether new information is good or bad news cannot be predicted. If already knew, thus that information is called as today's information and it will affect the stock prices today as soon as possible. But, nobody knows about stock prices for tomorrow because no one can predict what new information will be tomorrow. The prediction of stock prices should be done today based on today's information, but it will not guarantee.

Bad news means information will negatively affect on stock prices, that is the declining of stock prices. Example of bad news is

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<sup>2</sup> Maurice Kendall, "The Analysis of Economic Time Series, Part I: prices" *Journal of the Royal Statistical Society* 96 (1953)

the increasing of interest rate drastically, high inflation, and the increasing of fuel. Example of good news is increasing of sales, decreasing of interest rate, and business expansions. Those information will be ambiguity, depends on the business sector. For example, the increasing of exchange rate can be profitable for company in export business sector, but not for company in import business sector. Stock prices in market are not only affected by investor's psychology, bad news or good news, but also by investor's analysis.

Stock prices in market are *consensus price* in investors, and a stock price can be happened some times in a day with wide gap between highest market price and lowest market price. Wide market price gap means market price is reflected by all information gathered by investors which are inefficient. In efficient market, fluctuation of price is very fine. The comparison between stock prices in market and intrinsic value of stock reflects market efficiency level.

In strong efficient market, the difference between stock price and intrinsic value is very fine. In efficient market, investors have information that are relatively not different, thus the offering of put and call price is not far different, because analysis is done based on rational fundamental.



On the contrary, in weak efficient market, the difference between stock price and intrinsic value is relatively wide, because the form of stock price is affected by investor emotion that irrationally and limited information.

Perfect market only on theory, is stock price equal to corporate intrinsic value. In practice, there is no stock price equal to corporate intrinsic value.

Figure 1. The weak efficient market

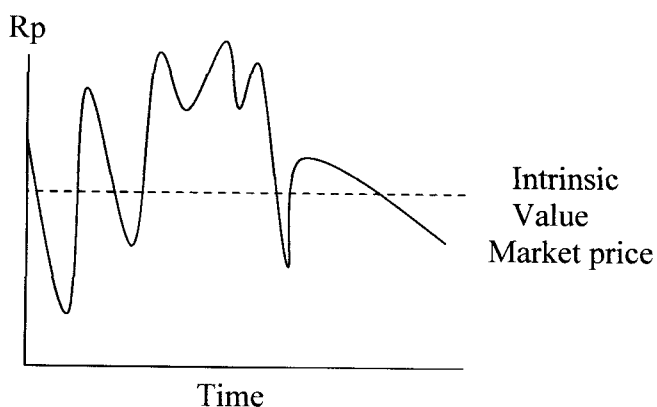
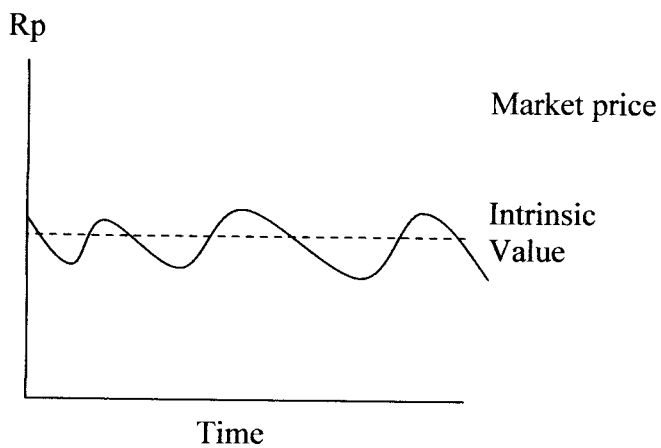


Figure 2. The strong efficient market



## **2.2. Theoretical Framework**

### **2.2.1. Investment Opportunity Set and Stock Price**

In the efficient market, price of a stock will be reflected fully for the information that available in the market. Hence, market should be reacted differently to information between Growth company and Non-Growth Company. The different of the stock price is only happened in semi strong efficient market based on the decision of investors who can respond available information fully in the stock market.

The difference of stock price between Growth company and Non-growth Company is appropriate to one of the stock price establishing processes. Stock price is happened because of flow of profit or cash in the future that value in present (Foster, 1986). Growth company has bigger future cash flow and profit flow than Non-growth Company. The policy on Growth company is the implementation of *Contracting Theory* and actually this is good news for investors, thus they will respond the news positively on stock price. Conversely, Non-Growth Company has accounting policy and financing policy which are different from Growth company. This means that, it is bad news for the investor, thus the investor will give negative respond or even will not respond it.

Abnormal return can be received in around financial report announcement period and only temporarily. The more efficient a market,

the faster or only a little of time for investor can receive abnormal return, only smart investor that can receive abnormal return.

Indication of growth company is one of information that can be used by investor to receive abnormal return in around annual financial report announcement. Abnormal return received by investor in around financial report announcement shows there is a reaction of market and the ability of investor to respond it.

*H<sub>01</sub>: Stock price for the Growth Company is higher than Non-growth Company in around annual financial report announcement.*

### **2.2.2. Investment Opportunity Set and Company Profit**

*Statement of Financial Accounting Concepts (SFAC) No.1 (1978)* explains that financial report of company should give the useful information for the investor and creditor in the present and potential for making the investment decision, credit, and other decisions. One of information of company is profit information, thus normatively investor can use the profit for the investment decision.

Al Najjar and Belkaoui (2001) show that company with high growth has the motivation for minimizing their profit. High level of growth is signed by the growth of investment opportunity set of company and will be showed in the company profitability level.

This research aims at profitability ratio that is based on investment measured from the comparison between operational profit and total assets or called as *Return on Assets* (ROA). Searby (1975) explains that ROA level has impact on the continuities or the growth of the company in the future. Low ROA or Negative ROA will decrease the ability of company to growth.

Searby argumentation is more examined on internal mechanism. External environment condition or industry such as market structure, competition and concentration level in an industry, or obstacle to enter in an industry sometimes affects the company performance. Hence, the comparison between company's ROA and industry's ROA as benchmark is more relevant in deciding company performance relative position in an industry.

Investment decision becomes an important part in keeping the continuities for company in the future. The appearing problem from investment decision is whether *investment opportunity set* (IOS) will implicate substantially to the company performance in the future time. IOS concept explained by Myers (1997) is the basic in deciding investment decision. Kallapur and Trombley (1999) explain that realized growth is the size of successful of IOS decision in the past, and present IOS decision will bring the implication in future growth.

Some problems appear from the concept explained by Kallapur and Trombley (1999). First, they assume *realized growth* equal to *prospective growth* or *future growth* as benchmark in determining IOS proxy. Second, there is *time lag* between IOS and *realized growth* or *prospective growth*. Hence, this research considers *time lag* in predicting company ROA. Present IOS decision will decrease company ROA, because there are many costs that must be expensed for future revenue. On the other side, some IOS proxies show assets intensity or company capital become important indicator in creating obstacle to enter in industry (Porter, 1979; Commanor and Wilson, 1972), therefore IOS decisions has two implications to company ROA.

*H<sub>02</sub>: Return on Assets for the Growth Company is higher than Non-Growth Company.*

### **2.3.Hypothesis Formulation**

According to the above explanation about the association of Investment Opportunity Set, Stock Price and Company Profit, thus the hypotheses in this research can be formulated as follows:

*H<sub>a1</sub>: Stock price for the Growth Company is not higher than Non-growth Company in around annual financial report announcement.*

*H<sub>02</sub>: Return on Assets for the Growth Company is higher than Non-Growth Company*

*H<sub>03</sub>: Stock price and Return on Assets have the positive relationship to Investment Opportunity Set*

The first hypotheses will be accepted or rejected as follow:

*H<sub>01</sub>: Stock price for the Growth Company is higher than Non-growth Company in around annual financial report announcement.*

*H<sub>a1</sub>: Stock price for the growth Company is not higher than Non-growth Company in around annual financial report announcement.*

H<sub>01</sub> accepted →  $\gamma$  and IOS coefficient variable are positive

H<sub>01</sub> rejected →  $\gamma$  and IOS coefficient variable are negative

The second hypothesis will be accepted or rejected as follow:

*H<sub>02</sub>: Return on Assets for the Growth Company is higher than Non-Growth Company.*

*H<sub>a2</sub>: Return on Assets for the Growth Company is not higher than Non-Growth Company*

H<sub>02</sub> accepted →  $\gamma$  and IOS coefficient variable are positive

H<sub>02</sub> rejected →  $\gamma$  and IOS coefficient variable are negative

The third hypothesis will be accepted or rejected as follows:

$H_{03}$ : *Stock price and Return on Assets have the positive influence to Investment Opportunity Set*

$H_{a3}$ : *Stock price and Return on Assets do not have the positive influence to Investment Opportunity Set*

$H_{03}$  accepted  $\rightarrow \gamma_1, \gamma_2$ , and IOS coefficient variable are positive

$H_{03}$  rejected  $\rightarrow \gamma_1, \gamma_2$ , and IOS coefficient variable are negative

## CHAPTER III

### RESEARCH METHOD

#### 3.1. Research Method

Research of the impact of investment opportunity set on company profit and stock price will use companies on LQ 45 Index from year 2001 until year 2005 published on Jakarta Stock Exchange as the research sample. Method of sample selection is *purposive sampling method* and data are collected from *Indonesia Capital Market Dictionary*, data base from PPA, Pojok BEJ at MM UGM and UII. Research variables will be divided into independent and dependent variables. To find the impact of investment opportunity set, the data from stock price, company profit, variable will be analyzed by using regression analysis method.

#### 3.2. Research Subject

Selection of sample will be based on *purposive sampling method*, with categories of sample as follows:

1. The companies are listed on Jakarta Stock Exchange starting form year 2001 until year 2005, consistently;
2. The companies are including on LQ 45 Index from year 2001 until year 2005 and never miss the periods.



3. The companies have the annual financial report that end on every December 31 starting from year 2001 until year 2005 and publish the annual financial report;

**Table.1**  
**Sample Selection Table**

Number of companies listed on LQ 45 from year 2001 until 2005	45
Number of companies on LQ 45 that are not always listed on LQ 45 Index	(30)
Number of companies that have not finished financial report on December 31	0
Number of companies that included as samples before classification	(3)
Number of companies as samples (6 for growth firms and 6 for non-growth firms)	12

Furthermore, the selected samples will be classified into two sub samples, which are Growth Company and Non-Growth Company.

Data used on this research is secondary data including: (1) Accounting data, which are financial report, dividend, closing stock price, and the number of listed stock from year 2001 until year 2005 published by Jakarta Stock Exchange on *Indonesian Capital Market Dictionary*. (2) Data of daily stock price of every company from year 2001 until year 2005 gathered from database in Pojok BEJ FE-UII. This daily data is used because the data has the sensitivity higher in

respond the reaction of market compared to stock data in weekly or monthly (Brown and Warner, 1985).

Samples for this research can be seen below:

#### 1. ASTRA INTERNATIONAL TBK

PT Astra International Tbk ("Astra or Company") was founded in 1957 as a general trading company based in Jakarta, Indonesia and was initially involved in agricultural trade. Astra is now one of the largest conglomeration business group in Indonesia. It had been diversified into the manufacture and distribution of automobiles, heavy equipment and components in the late 1960s. It currently has six business divisions: Automotive, Financial Services, Heavy Equipment, Agribusiness, Information Technology, and Infrastructure.

The company became a publicly listed company on 4<sup>th</sup> April 1990, when it listed its shares on the JSX and the SSX. Astra has a diversified shareholder base which includes foreign shareholders with substantial shareholdings. The company's market capitalization as at 31 December 2005 stood at approximately Rp. 41.3 trillion (USD 4.2 billion) with 4,253 shareholders. Astra Group currently employs 118.700 employees across its businesses.

#### 2. GUDANG GARAM TBK

The company began as a small entrepreneurial venture established in 1971 at Kudus, East Java. The company's products consist of three types,

namely, cigarette rolled in corn husk paper under three brand names, hand-rolled cigarettes under nine brand names, and machine—rolled cigarettes under six brand names, four of which are considered as premium brands, namely Gudang Garam International Surya 16, 10 packs Gudang Garam Merah, and 12 packs Gudang Garam Merah.

PT Gudang Garam Tbk is one of the leading cigarette producers that secure the largest market share in Indonesia, produced more than 70 billions sticks in the year 2001 and well-known as the high quality kretek cigarette producer.

Measured by assets controlled, product sales, duties and taxes are paid to the Indonesian Government and by total number of employees. PT Gudang Garam, Tbk. is the biggest company involved in the Indonesian kretek cigarette industry. 'Tbk' denotes that the company lists part of its shares in the Stock Exchange.

### 3. GAJAH TUNGGAL TBK

The company's tire manufacturing began in 1951 with a small bicycle tire factory, and since then the company has expanded its production capacity and diversified first into the manufacture of motorcycle tires and tubes and then into the manufacture of passenger and commercial vehicle tires. In 1961 it changed its name to PT Gajah Tunggal. In 1990, the company became public company listed on Jakarta Stock Exchange and Surabaya Stock Exchange.

#### 4. INDOFOOD SUKSES MAKMUR TBK

PT. Indofood Sukses Makmur Tbk (Indofood) is the premier processed foods company in Indonesia, with leading domestic market shares for most of its products, including instant noodles, wheat flour, branded edible oils and fats, baby foods and snack foods. Indofood also produces food seasonings products. Currently Indofood is the largest instant noodles manufacturer and the largest flour miller in the world, with installed capacities of approximately 13 billion packs and 3.6 million tons per annum, respectively. Indofood owns the largest distribution network in Indonesia.

In 1994, the company was listed its 763 million shares at Jakarta Stock Exchange and Surabaya Stock Exchange.

#### 5. INDOCEMENT TUNGGAL PERKASA TBK

The company's history began in 1973 with the incorporation of PT Distinct Indonesia Cement Enterprise by the Liem investors. The plant completed in 1975, started production with an installed capacity of 500,000 tons per year. Following the commercial success of this part of plants were added over the years. All eight plants were then managed by six different business entities. The current entity was established on January 1985 as a holding company to acquire and merge the eight plants into a single business. On July 1985, the Indonesian government acquired a 35% shareholding equity. In 2001, Heidelberg Cement Group, based in Germany and the world's leader with cement operations in 50 countries, assumed a controlling majority

shareholding of the company. Since then, the company has focused on regaining financial sustainability which it lost during the Asian financial crisis. Indocement's shares are listed on both the Jakarta and Surabaya stock exchanges.

#### 6. INDOSAT TBK

PT Indosat, Tbk was established in 1967 as a foreign investment company to provide international telecommunications services in Indonesia, commencing its operations in 1969 with the inauguration of the Jatiluhur earth station. In 1980, the Government of Indonesia acquired all of the shares of Indosat, which then became a State-Owned Enterprise (SOE). In 1994, Indosat listed its shares on the Jakarta Stock Exchange, the Surabaya Stock Exchange and the New York Stock Exchange, achieving the distinction of being the first SOE to be listed overseas.

At the end of 2002, the Government of Indonesia undertook a 41.94% divestment of its shares in Indosat to Singapore Technologies Telemedia Pte. Ltd. through the holding company of Indonesia Communications Limited.

On November 2003, following the signing of the Merger Deed to merge Satelindo, IM3 and Bimagraha into Indosat, Indosat emerges as a cellular focused on Full Network Service Provider (FNSP).

#### 7. KALBE FARME TBK

The company was established on September 10, 1966 and also started its commercial operations. Currently, the company is primarily engaged in the

production and development of pharmaceutical products (human and animal healthcare). By the end of 2005, Kalbe was represented at seven markets, namely Malaysia, the Philippines, Thailand, Vietnam, Myanmar, Sri Lanka and South Africa.

#### 8. PANIN BANK TBK

Panin Bank is one of commercial banks in Indonesia. Panin Bank was established in 1971 and listing stock on Jakarta Stock Exchange in 1982 as the first go-public bank.

With the strong capital structure and high capital adequacy ratio, Panin bank was not recapitalized by government after economic crisis in 1998.

On December 2005, Panin bank was listed as the biggest eighth bank in Indonesia from the side of assets Rp36, 9 trillion, meanwhile from capital as the biggest fifth bank in Indonesia Rp5, 7 trillion and Capital Adequacy Ratio 28, 7 %.

#### 9. TAMBANG TIMAH (PERSERO) TBK

The company represents as a merger of three Dutch mining companies with operations in Indonesia: Bangkatinwinning, Gammenschappelijke Mijnbow Maatschappij Billiton and NV Singkep Exploitatie Tin. The operational area of the company encompasses Bangka island, Karimun island, and coastal areas of Sumatra. On going public, Tambang Timah undertook dual listing on the Indonesia Caoital Market and London Stock Exchange (LSE).

#### 10. TELEKOMUNIKASI INDONESIA TBK

The company represents as continuation of an enterprise owned by the government of the Dutch East Indies, Post en Telegraafdienst, founded pursuant to the Staatsblad concerning Indonesische Bedrijvenwet. After along process of evolution, in 1991, Telkom was transformed from a perusahaan umum-PERUM (state corporation) – into a state owned limited liability company with greater autonomy.

TELKOM was listed the stock in Indonesia capital market and Foreign capital market, which are Jakarta Stock Exchange (JSE), Surabaya Stock Exchange (SSE), New York Stock Exchange (NYSE), London Stock Exchange (LSE) and Tokyo Stock Exchange (TSE) (Public Offering Without Listing)POWL.

#### 11. UNITED TRACTORS TBK

UT was established on October 13, 1972 initially named PT Astra Motor Works, with PT Astra International Tbk as the majority shareholder. Later on, the name was changed to PT United Tractors. Since then, UT was involved mainly in the distribution of the worldwide known Komatsu heavy equipment products from Komatsu Ltd, Japan as the sole distributor in Indonesia.

In 1970, UT has expanded its business into manufacturing and engineering, with its basic location on Jalan Raya Bekasi km. 22, Cakung,

Jakarta Timur. Aim to expand into services and product support, in 1981 UT also established several Affiliated Company (Affco).

United Tractors Group is a primary supplier of heavy equipment and related services in Indonesia with total assets exceeds Rp 5.58 trillion at end of 2000. As a major distributor of heavy equipment in Indonesia, PT United Tractors Tbk (UT) has significant market share in manufacturing, mining and exports industry. UT's objectives are: to achieve a long-term sustainable growth, to be an asset to the country, to provide the best services to customers, to respect the individuals, to commit itself to teamwork, and finally to constantly striving for excellence.

## 12. RAMAYANA LESTARI SENTOSA TBK

In 1978 they opened their first store which specialized mainly in garment and clothing in Jalan Sabang. They named their store "Ramayana Fashion Store".

In 1985, fashion apparels such as shoes, handbags, accessories were introduced. Moving forward with optimism, Ramayana was also expanding its coverage area. In that same year, the first store outlet outside Jakarta was opened in Bandung.

By 1989 Ramayana has become a retail chain, consisting of 13 outlets and employing a total of 2,500 workers. The variety of products sold has also become more extensive to include household necessities, toys and stationeries.



Soon enough, in 1993 one stop shopping center was implemented in every Ramayana store due to the extensive product range and affordable prices

#### 13. ANEKA TAMBANG (PERSERO) TBK

PT Aneka Tambang (Persero) Tbk is a leading Indonesian mining and minerals processing company that was founded on July 5, 1968 as Perusahaan Negara (State-Owned Company) "PN Aneka Tambang".

The seven independent state owned companies that merged to form Aneka Tambang included: PT Nikel Indonesia; PN Tambang Bauksit Indonesia; PN Logam Mulia; BPU Perusahaan-perusahaan Tambang Umum Negara; Proyek Pertambangan Intan Martapura-South Kalimantan; PN Tambang Emas Tjikotok; and Proyek Emas Logas, Pakan Baru-Riau. On May 21, 1975, according to the decision of the Minister of Justice of the Republic of Indonesia, the status of Aneka Tambang was changed from a state-owned company (Perusahaan Negara) to a limited corporation -PT Aneka Tambang (Persero).

#### 14. ASTRA AGRO LESTARI TBK

PT Astra Agro Lestari Tbk (AAL) was founded in 1981 through PT Pandu Dian Pertiwi, a company owned by the Soeryadjaya family, Mr. T.P. Rachmat, Mr. Benny Subianto, Mr. Kiki Sutantyo and Mr. Rahadi Santoso.

As a member of the Astra International Group, the company has grown and expanded into one of the largest oil palm plantations in Indonesia. Among noteworthy events in the course of its history since the establishment

in 1988 was its listing in both the Jakarta Stock Exchange and Surabaya Stock Exchange.

#### 15. BANK CENTRAL TBK

Bank Central Asia was first founded on 21 February 1957 as Bank Central Asia NV. A lot of things have happened since then-the most significant of all being perhaps the Asian Monetary crisis in 1997. Although this crisis had a tremendous impact on Indonesia's entire banking system, in particular it affected BCA's cash flow and even threatened its survival. Panic rush forced the bank to seek assistance from the Indonesian government. The Indonesian Banking Restructuring Agency (IBRA) took over BCA in 1998. Thanks to its management's business sagacity and shrewd decision making, full recovery was accomplished later in the same year. Public confidence in BCA was fully restored and BCA was released by IBRA to BI in 2000. Subsequently, BCA took a major step going public. The IPO took place in 2000.

### 3.3. Research Setting

Data of this research will be taken from *Indonesia Capital Market Dictionary* that contains Accounting data, which are financial report, dividend, closing stock price, and the number of outstanding stock from year 2001 until year 2005 published on Jakarta Stock Exchange and data base from PPA, Pojok BEJ at MM UGM and UII.

### **3.4. Research Instrument**

#### **3.4.1. Validity**

Validity tests how well an instrument that is developed measures the particular concept it is supposed to measure. The validity of a measuring instrument indicates when we ask a set of question (i.e., develop a measuring instrument) in hopes that we are tapping the concept we set out to measure and not something else. This can be determined by applying certain validity tests. In other words, validity is concerned with whether we measure the right concept.

#### **3.4.2. Reliability**

Reliability tests how consistently a measuring instrument measures whatever concept it is measuring. The reliability of a measure indicates the extent to which the measure is without bias (error free) and hence offers consistent measurement across time and various items in the instrument. In other words, reliability is concerned with stability and consistency in measurement and the reliability of a measure indicates the ability and consistency with which the instrument measures the concept and helps to assess the “goodness” of a measure.

### **3.5. Research variables**

In this research, variables are divided into two variables, which are independent variable and dependent variable. Independent variable is Investment

Opportunity Set and dependent variables are stock price, company profit, and corporate governance.

### **Dependent Variable**

Dependent variable which is used in this research is Investment Opportunities Set (IOS). But IOS is an unobservable variable, thus it is needed proxies that can be used to substitute IOS. The used proxies as surrogacy are *growth firms* and *Non growth firms*.

Hence, IOS as a dependent variable in this research is *DUMMY variable* that is between *growth firms* and *non growth firms*. This variable will be valued to others variable.

Classifying of sample as growth company and Non-growth Company is proxy with IOS value with the formulas as follows:

- a. Ratio of *Market to Book Value of Equity* (MVEBVE)

$$\frac{[\text{Closing stock price} \times \text{number of outstanding stock}]}{[\text{Total of equity}]}$$

- b. Ratio of Firm Value to Book Value of PPE (VPPE)

$$\frac{\text{Assets} - \text{Equity} + (\text{Outstanding stock} \times \text{Closing price})}{\text{Net fixed assets}}$$

- c. CAPBVA

$$\frac{(\text{Book value of assets}_t - \text{book value of assets}_{t-1})}{\text{Total of assets}}$$

## d. Price Earning Ratio

$$\frac{\text{(Closing price)}}{\text{(Profit / outstanding share)}}$$

## e. MVABVA

$$\frac{\text{Assets} - \text{Equity} + (\text{Outstanding stock} \times \text{Closing price})}{\text{Net assets}}$$

All of the IOS values are analyzed by using *common factor analysis*.<sup>3</sup> Total of factor can be used with the number of IOS variable, but total of factor that can be used further is factor that has *eigenvalues* equal or more than 1 or total of a value *eigenvalues* equal or more than *communalities* total value of all used variable (Hair and friends, 1995)

### Independent Variable

Independent variable that is used in this research consists of *Cumulative Abnormal Return (CAR)* as proxy of stock price movement and *Return on Assets (ROA)* as proxy of Company profit.

Stock price change proxy in this research is *cumulative abnormal return (CAR)*. CAR is an accumulation of *abnormal return* in window period for each stock. *Abnormal return* is difference between realization *return* of each stock with expectations of each stock, computed with formula as follows:

$$AR_{it} = R_{it} - E[R_{it}]$$

<sup>3</sup> Gaver and Gaver 1993, and Sami and friends. 1999 use the method of common factor analysis in classify company become Growth Company and Non-growth Company.

$AR_{it}$  = *Abnormal return* of to i-stock on t-window period

$R_{it}$  = *Realization return* that happened for to i-stock on t-window period

$E[R_{it}]$  = *Expectation return* to i-stock for t-window period

*Return* of realization is computed with formula as follows:

$$R_{it} = (P_{it} - P_{it-1}) / P_{it-1}$$

$R_{it}$  = *Return* of i-stock on t-day

$P_{it}$  = *Closing price* of stock on t day

$P_{it-1}$  = *Closing price* of i-stock on t-1 day

*Return* of expectation is computed with market model. This expectation model is made by using regression technique of *Ordinary Least Square* (OLS), as follows:

$$R_{ij} = \alpha_i + \beta_i \cdot R_{Mj} + \varepsilon_{ij}$$

$R_{ij}$  = *Realization return* of to i-stock on j-estimation period

$\alpha_i$  = *Intercept* for to i-stock

$\beta_i$  = *Slope coefficient* that is beta of to i-stock

$R_{Mj}$  = *Market index return* on j-estimation period

$\varepsilon_{ij}$  = *Residue mistake* of to i-stock on j-estimation period

For calculate *return* of expectation at window period the formula used is as follows:

$$E[R_{I,t}] = \alpha_i + \beta_i \cdot E[R_{M,t}]$$

$E[R_{I,t}]$  = *Expectations return* of to i-stock on t-period

$\alpha_i$  = *Intercept* for to i=stock

$\beta_i$  = Slope coefficient that is beta of to i-stock

$E [R_{Mt}]$  = Market expectations return of to i-stock on t-period that value =

$$R_{Mt}$$

This research uses estimation period 100 days (4th day until 103<sup>rd</sup> day) and window period is three days before and three days after the event. Index return used in this research is IHSG, calculated with formula as follows:

$$R_{Mt} = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}}$$

$R_{Mt}$  = Stock market index return on to t-day

$IHSG_t$  = Daily IHSG on to t-day

$IHSG_{t-1}$  = Daily IHSG on to t-1 –day

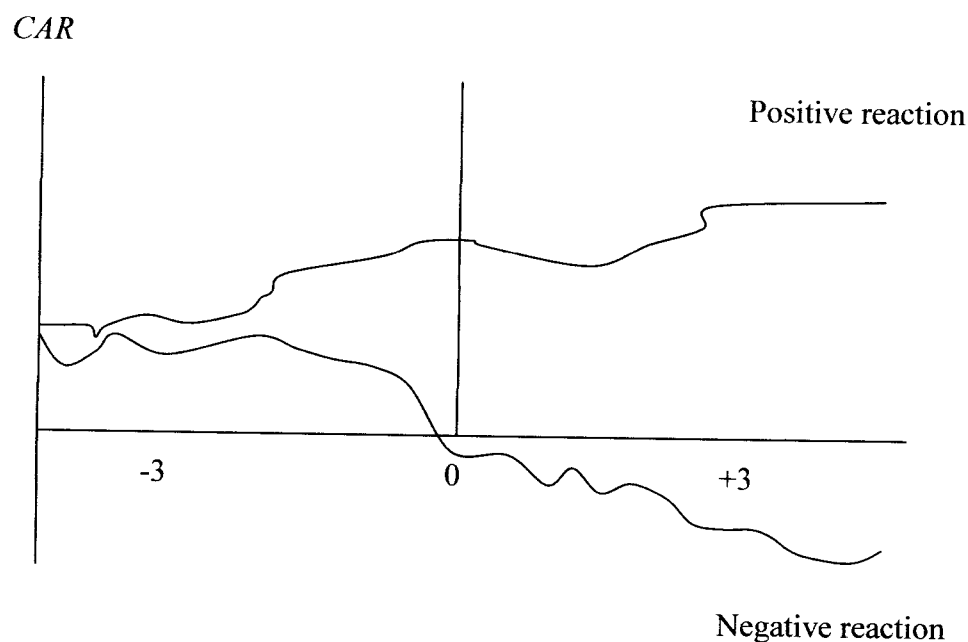
For calculating the CAR, the formula used is as follows:

$$CAR_{i,t} = \sum_{t-3}^{t+3} AR_{i,a}$$

$CAR_{i,t}$  = Accumulation of abnormal return of to i-stock on t-day, calculated from starting of window period until the end window period.

$AR_{i,a}$  = Abnormal return of to i-stock on a-day, starting from day of t-3 until day of t+1

Figure 3. Stock price in around announcement date



Return on Assets is used to represent profitability of company. Ratio of Return on Assets can be used to measure net profit earned by firm from all of assets. High or Low of Return on Assets depends on company decisions, investment or assets (investment decision) , also the efficiency level of assets using.

Positive Return on Assets ratio shows the used total of assets for operational is able to give profit for firm. In other side, Negative Return Assets ratio shows the used total of assets for operational is not able to give profit.



Return on Assets (ROA) compares net profit margin to total assets turn over or net profit after taxes to the total assets of the company. The following formula is:

$$\text{Net profit Margin} = \text{Net Profit after Taxes} / \text{Net Sales}$$

Net profit margin measures profitability with respect to sales generated; net income per dollar of sales

$$\text{Total Assets Turn Over} = \text{Net Sales} / \text{Total Assets}$$

Total assets turn over measures relative efficiency of total assets to generate sales

$$\text{Return on Assets} = (\text{Net Profit Margin} \times \text{Total Assets Turn Over}) 100\%$$

Or

$$\text{Return on Assets} = (\text{Net profit after taxes} / \text{Total Assets}) \times 100\%$$

### 3.6. Research Procedures

In order to find out the answer for the research problems, the researcher tried to construct research problems by which he could conduct an experimental research. The procedures were arranged as follows:

- Samples of company will be divided into two categories, which are growth companies and non-growth companies by using measurement tools from IOS MVEBVE, VPPE, Price Earning Ratio, CAPBVA, and MVABVA and extracted by IOS factor analysis. Forty percent of sample with the highest

score will be categorized as Growth Company and Forty percent of sample with the lowest score will be categorized as Non-Growth Company.<sup>4</sup>

- Before test hypothesis, the variable of *Cumulative Abnormal Return* (CAR) and *Return on Assets* (ROA) will be tested by Kolmogorov-Smirnov test, to test data normality.
- Variable of *Cumulative Abnormal Return* (CAR) and *Return on Assets* (ROA) will be tested by t-test.
- Every category of companies will be analyzed further to answer the hypothesis by using regression analysis to test the effect of Investment Opportunity Set into stock price, company profit, and corporate governance. With the acceptable probability of random error is 5 %
- Deriving conclusion and any other findings.

### 3.7. Technique Data Analysis

To test the effect of stock price and company profit to IOS, the following regression model analysis is:

$$IOS = \gamma_0 + \gamma_1 ROA + \gamma_2 CAR + e$$

---

<sup>4</sup> In the research of Sami et.al(1999) determining sample of Growth Company and Non-Growth Company is considering on *first quartile* and *third quartile*.

Where:

$CAR$  = Accumulation of abnormal return of to i-stock on t-day, calculated  
from starting of window period until the end window period.

$ROA$  = Return on Asset, Proxy of company profit variable

$e$  = the random error

$\gamma_k$  = the usual regression coefficient

## CHAPTER IV

### RESEARCH FINDINGS, DISCUSSION, AND IMPLICATIONS

#### 4.1. Research Description

##### 4.1.1. Descriptive Statistic

Table 2 shows the summary of descriptive statistic analysis result that is used on in this research. Data on the table 2 consist of 4 groups, they are:

1. IOS variable, from year 2001 until 2005;
2. IOS average variable (2001-2005) that is used as basic in classifying company sample;
3. Variable that is related to stock price changing;
4. Variable that is related to company profit.

In the table of descriptive statistics, there are variable *fact\_1* and *fact\_2*. These variables are representative variables of MVEBVE, VPPE, PER, MVABVA, and CAPBVA after having been extracted with *common factor analysis*. *Fact\_sum* variable is accumulation variable of *Fact\_1* and *Fact\_2* score. *Fact\_sum* variable is index for classifying growth firm and non-growth firm.

**Table.2**  
**Statistic Descriptive Table**

**Panel A: Investment Opportunity Set from year 2001 until 2005**

Variables	N	Minimum	Maximum	Mean	Std. Deviation
MVEBVE2001	15	-.13	4.14	1.4380	1.28938
VPPE2001	15	.98	47.91	7.8287	12.10094
PER2001	15	-40.82	249.61	20.7973	64.89374
MVABVA2001	15	.34	2.15	1.1430	.44081
CAPBVA2001	15	-.32	.64	.1907	.25941

Variables	N	Minimum	Maximum	Mean	Std. Deviation
MVEBVE 2002	15	.13	9.80	1.8100	2.33466
VPPE 2002	15	1.18	58.27	7.6440	14.38102
PER 2002	15	.19	28.49	8.6413	8.55081
MVABVA 2002	15	.32	1.95	1.0987	.38548
CAPBVA 2002	15	-.09	.56	.2407	.19178

Variables	N	Minimum	Maximum	Mean	Std. Deviation
MVEBVE 2003	15	.96	9.80	3.0767	2.73833
VPPW 2003	15	1.38	74.45	10.4960	18.33967
PER 2003	15	2.06	25.15	11.8863	6.00742
MVABVA 2003	15	.29	2.81	1.4887	.67484
CAPBVA 2003	15	-.02	.57	.2580	.16398

Variables	N	Minimum	Maximum	Mean	Std. Deviation
MVEBVE 2004	15	.69	5.37	2.2993	1.08347
VPPE 2004	15	2.10	88.63	11.0267	21.99963
PER 2004	15	4.06	97.56	16.2940	23.09852
MVABVA 2004	15	.77	1057.00	71.6973	272.57599
CAPBVA 2004	15	.01	.54	.3007	.16149

Variables	N	Minimum	Maximum	Mean	Std. Deviation
MVEBVE 2005	15	.60	5.11	2.4127	1.15995
VPPE 2005	15	.15	86.82	11.1020	22.09945
PER 2005	15	5.12	69.30	16.0173	15.31840
MVABVA 2005	15	.65	2.60	1.3700	.48861
CAPBVA 2005	15	.07	.60	.3440	.16181

**Panel B: Investment Opportunity Set for Growth and Non-Growth Firm**

Growth Firm

Variables	N	Minimum	Maximum	Mean	Std. Deviation
MVEBVE	6	1.144	7.280	3.34867	2.309434
VPPE	6	2.386	71.216	19.06767	26.260112
PER	6	10.000	61.391	23.91680	18.829037
MVABVA	6	.950	1.684	1.44933	.341816
CAPBVA	6	.082	.444	.21933	.137536
Fact_1	6	-.52175	3.42708	.4495279	1.52923207
Fact_2	6	-.73423	2.14927	.7860156	.97967202
Fact_sum	6	.01208	3.88439	1.2355435	1.43971655

Non-Growth Firms

Variables	N	Minimum	Maximum	Mean	Std. Deviation
MVEBVE	6	.502	7.280	2.31233	2.473506
VPPE	6	1.716	5.652	2.81333	1.484490
PER	6	2.266	10.638	6.87700	3.234715
MVABVA	6	.503	1.312	1.08573	.307325
CAPBVA	6	-.050	.542	.28967	.204777
Fact_1	6	-0.62087	-0.01178	-0.3152799	0.20598563
Fact_2	6	-1.97613	-0.22994	-0.6887319	0.66235827
Fact_sum	6	-2.17528	-0.69640	-1.0040100	0.57683346

**Panel C: Cumulative Abnormal Return**

	N	Minimum	Maximum	Mean	Std. Deviation
GROWTH	6	-.184620	.145080	-.00367792	.139245966
NONGROWTH	6	-.066675	.229920	.04851021	.132791531

**Panel D: Return on Assets**

	N	Minimum	Maximum	Mean	Std. Deviation
GROWTH	6	.02	.14	.0917	.05345
NONGROWTH	6	.03	.12	.0783	.03430

**4.1.2. Growth Firms and Non-Growth Firms**

*Common Factor Analysis* procedure is used to identify *growth firms and non-growth firms*. This procedure is used, because it can identify latent dimensions or make representation of real variables (Hair and friends, 1995). Each ratio value that is used as IOS proxy is counted every year and every sample company starting from year 2001 until year 2005. Further, gathered ratio of every proxy and every company for five years is counted the average to get one ratio number from every IOS proxy and every sample company. The average ratio of every IOS proxy and every company is used as data in analysis factor procedure.

**Table.3**  
**Common Factor Analysis IOS**

A. Communalities of IOS					
IOS	MVEBVE	VPPE	PER	MVABVA	CAPBVA
<i>Communalities</i>	0.850	0.552	0.185	0.830	0.678
B. Eigenvalues					
Factor	1	2	3	4	5
<i>Eigenvalues</i>	1.760	1.335	0.946	0.652	0.306
C. Correlation between IOS Factor					
IOS	MVEBVE	VPPE	PER	MVABVE	CAPBVA
Factor 1	0.779	-0.425	-0.292	0.833	0.277
Factor 2	0.461	0.610	0.316	0.224	-0.775

**Table.4**  
**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.760	35.201	35.201	1.760	35.201	35.201
2	1.335	26.709	61.910	1.335	26.709	61.910
3	.946	18.924	80.835			
4	.652	13.043	93.877			
5	.306	6.123	100.000			

The above table shows the result of *common factor analysis* to five proxies of growth company. *Common factor analysis* is factor model that is based on a correlation matrix reduction. *Communality* is total of authentic variables variant that divided in all variables that including on analysis (Hair and friends, 1995). In Panel A is showed individual IOS *communalities* value, those values are used to define total of representation factor for authentic variables. Total of those five



*communalities* values are 3.095. To get that value, it needs two factors that have *eigenvalues* more than one, they are factor one (1.760), and factor two (1.335). This term is suitable with *the rule of thumb*, that is accumulation of used factor as representation factor that has *eigenvalues* value equal or more than one (Hair and friends, 1995). In this case, two factors are needed to explain both side relationships between IOS proxy. Factor one is related to market-to-book-ratio. *Loading* of MVABVA and MVEBVE has the highest value, that is 0.883 and 0.799 (look table 3C). Factor two is related to composition of book value of assets, that is VPPE and CAPBVA, with *Loading* are 0.610 and -0.775.

Deciding company in growth and non-growth is based on the total of those both factors (factor 1 + factor 2). The accumulation of this index (Fact\_sum) is sorted from the highest until the smallest. Forty percent of the highest index is growth company, and forty percent of lowest index is non-growth company.

**Table.5**

**Non-Growth Company and Growth Company**

**List of Non-Growth Company**

COMPANY	MVEBVE	VPPE	PER	MVABVA	CAPBVA	Fact_Sum
GAJAH TUNGGAL TBK	1.316	1.738	2.266	1	-0.05	1.254
DOCEMENT TUNGGAL RKASA TBK	1.556	1.716	5.1	1.312	0.226	1.982
DOFOOD SUKSES MAKMUR K	1.744	3.056	7.198	1.198	0.198	2.6788
DOSAT TBK	2.528	2.176	7.514	1.212	0.442	2.7744

RA INTERNATIONAL TBK	1.816	5.652	5.488	1.1794	0.248	2.87668
BANG TIMAH (PERSERO) TBK	0.502	2.488	10.638	0.503	0.542	2.9346

#### of Growth Company

IPANY	MVEBVE	VPPE	PER	MVABVE	CAPBVA	Fact Sum
BE FARMA TBK	7.28	8.368	10	1.66	0.158	5.4932
ANG GARAM TBK	1.904	6.308	17.694	1.596	0.548	5.61
IAYANA LESTARI SENTOSA	3.164	8.71	15.974	1.684	0.444	5.9952
EKOMUNIKASI INDONESIA	4.732	2.386	23.208	1.664	0.228	6.4436
IN BANK TBK	1.144	19.758	16.408	0.95	0.1	7.672
IK CENTRAL ASIA TBK.	1.636	71.216	61.3908	1.072	0.082	27.07936

#### 4.1.3. Normality Data Testing

Before testing hypothesis one and two, the researcher tests normality data by using Kolmogorov-Smirnov test with the significant level is 0.05. Table shows the result of normality data test for each hypothesis.

**Table.6**  
**Kolmogorov-Smirnov Test**

		CAR	ROA
N		15	15
Normal	Mean	.032337	.083333
Parameters(a,b)	Std. Deviation	6	3
Most Extreme	Absolute	.126230	.040824
Differences	Positive	52	83
	Negative	.146	.143
Kolmogorov-Smirnov Z		.146	.126
Asymp. Sig. (2-tailed)		-.100	-.143
		.566	.555
		.906	.918

#### 4.1.4. Hypothesis One Testing

Data that is used to test hypothesis one is normal, therefore this hypothesis testing uses *t-test* and tested with *multivariate*. Result of T-Test of CAR is presented as follow:

**Table.7**  
**T-Test CAR**

Variable	N	Growth Firm	Non-Growth Firm	t-value	Significant
CAR	12	-0.03678	0.04851021	-0.613	0.567

Result of this testing hypothesis shows that CAR on growth-company is lower than CAR on non-growth company.

Hypothesis one is also tested by multivariate test. This test is used to investigate more detail by using company profit that uses *Return on Asset* (ROA). This testing is started with multicollinearity and homogeneity that presented on following table

**Table.8**  
**Multicollinearity and Homogeneity CAR and ROA**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.019	.996		.019	.985		
	COMPANY PROFIT	.463	10.487	.013	.044	.965	.885	1.130
	STOCK PRICE CHANGING	-1.780	3.392	-.159	-.525	.609	.885	1.130

#### 4.1.5. Hypothesis Two Testing

Data that is used to test hypothesis three is normal, therefore this hypothesis testing uses *t-test* and tested with *multivariate*. Result of T-Test of ROA is presented as follow:

**Table.9**  
**T-Test ROA**

Variable	N	Growth Firm	Non-Growth Firm	t-value	Significant
ROA	12	0.0917	0.0783	0.539	0.613

Result of this testing hypothesis shows that ROA on growth-company is bigger than CAR on non-growth company. Although the result is suitable for  $H_{02}$ , but the result is insignificant statistically.

Hypothesis three is also tested by multivariate test. This test is used to investigate more detail the use of stock price by using *Cumulative Abnormal Return (CAR)* as proxy. This testing is started with multicollinearity and homogeneity presented on following table

**Table.10**  
**Multicollinearity and Homogeneity CAR and ROA**

del		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	.019	.996		.019	.985		
	COMPANY PROFIT	.463	10.487	.013	.044	.965	.885	1.130
	STOCK PRICE CHANGING	-1.780	3.392	-.159	-.525	.609	.885	1.130

#### 4.1.6. Hypothesis Three Testing

Data that is used to test hypothesis three is normal with the used data is 15 companies on LQ 45 Company from year 2001 until 2005, therefore this hypothesis testing uses regression analysis to know the relationship. Result of regression analysis is:

**Table.11**  
**Regression Analysis**

#### **Model Summary(b)**

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.164(a)	.027	-.135	1.506876	2.534

**ANOVA(b)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.752	2	.376	.166	.849(a)
	Residual	27.248	12	2.271		
	Total	28.000	14			

**Coefficients(a)**

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Constant)	.019	.996		.019	.985		
COMPANY PROFIT	.463	10.487	.013	.044	.965	.885	1.130
STOCK PRICE CHANGING	-1.780	3.392	-.159	-.525	.609	.885	1.130

**Collinearity Diagnostics(a)**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				Constant	COMPANY PROFIT	STOCK PRICE CHANGING
1	1	1.967	1.000	.04	.04	.03
	2	.952	1.437	.00	.01	.80
	3	.081	4.935	.96	.95	.17

**Residuals Statistics(a)**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.37634	.41236	.00000	.231749	15
Residual	2.363846	3.840122	.000000	1.395096	15
Std. Predicted Value	-1.624	1.779	.000	1.000	15
Std. Residual	-1.569	2.548	.000	.926	15

#### **4.2. Research Findings**

In the research about association between investment opportunity set, company profit, and stock price, the researcher finds the research result as follows:

In the test of hypothesis one, the researcher uses t-test and multicollinearity and homogeneity\_test. The researcher finds *Cumulative Abnormal Return (CAR)* of Growth Company is not always bigger than Non-Growth Company. In this research, the researcher finds CAR of Growth Company is lower than Non-Growth Company. By using t-test, CAR of Growth Company is -0.003678 and CAR of Non-Growth Company is 0.04851021. This case is different with the previous study that supports CAR of Growth Company which is bigger than CAR of Non-Growth Company.

In multicollinearity and homogeneity test, the researcher finds that between independent variables *Cumulative Abnormal Return* (CAR) and *Return on Assets* (ROA) do not show linear relationship or multicollinearity. VIF value of each variable is 1.013, meanwhile the multicollinearity can happen if value of each variable is equal or more than 10 (Hair and Friends, 1955). In homogeneity test, the researcher finds no independent variable that is significant in level 0.05.

Result of *multivariate* test shows the coefficient of dummy variable is -1.780 and t-value is -0.525. Meaning to say, classification of growth firm and non-growth firm will not affect the stock price changing in market. This result is suitable to t-test.

In hypothesis two, the researcher does the same case with hypothesis one. Hypothesis three is tested by t-test and multicollinearity and homogeneity test. The researcher finds that *Return on Assets* (ROA) of Growth Company is bigger than *Return on Assets* (ROA) of Non-Growth Company. By using *t-test*, the researcher finds ROA of Growth Company is 0.0917 and ROA of Non-Growth Company is 0.0783. This case is different from previous finding stated that ROA of Growth Company will be lower than ROA Non-Growth Company.

By using multicollinearity and homogeneity\_test, the researcher finds that between independent variables *Cumulative Abnormal Return* (CAR) and *Return on Assets* (ROA) do not show linear relationship or



multicollinearity. VIF value of each variable is 1.013, meanwhile the multicollinearity can happen if the value of each variable is equal or more than 10 (Hair and Friends, 1955). In homogeneity test, the researcher finds no independent variable that significant in level 0.05.

Result of *multivariate* test shows the coefficient of dummy variable is 0.463 and t-value is 0.044. This means that classification of growth firm and non-growth firm will positively affect on the stock price changing in market. This result is suitable to t-test.

In hypothesis three, the researcher use regression analysis in order to know the relationship of each independent variables (Cumulative Abnormal Return and Return on Assets) to dependent variable (Investment Opportunity Set). In regression analysis, the researcher finds the coefficient of dummy variable for stock price (Cumulative Abnormal Return) is -1.780 and the coefficient of dummy variable for company profit (Return on Assets) is 0.4632. Therefore, the research can say that the relationship between Investment Opportunity Set and Cumulative Abnormal Return is not positive and the relationship between Investment Opportunity Set and Return on Assets is positive

In regression analysis, the researcher finds the empirical model about association between investment opportunity set, company profit, and stock price as follows:

$$\gamma = 0.19 + 0.4632\gamma_1 - 1.780\gamma_2$$

### 4.3. Implications

From the analysis that have been done and research finding that have been found by the researcher, the researcher will explain what implications of each variable, as follows:

Result of analysis shows CAR of Growth Company is lower than Non-Growth Firm, CAR of Growth Company is only -0.003678 and CAR of Non-Growth Company is 0.04851021. This case is different from previous study that supports CAR of Growth Company which is bigger than CAR of Non-Growth Company. In multicollinearity and homogeneity tests, VIF's value is 1.013 and none of independent variable is significant on level 5%.

Results of *multivariate* test shows coefficient of dummy variable is -1.780 and t-value is -0.525.

According to research findings, the researcher can explain that classification of growth firm and non-growth firm will not give effect on the stock price changing in the market. This result is suitable to t-test. This fact is contrast to the previous study stated that *Cumulative Abnormal Return* (CAR) of Growth Company will be bigger in around financial report announcement date than Non-Growth Company. Investors will not respond the indication of classification of company based on *Investment Opportunity Set Theory*. Therefore in this research, the researcher can draw a summary of the implication, which is this research will not accept

$H_{01}$ : *Stock price for the Growth Company is higher than Non-growth Company in around annual financial report announcement*” and accept  $H_{a1}$ “*Stock price for the Growth LQ 45 Company is not higher than Non-growth Company in around annual financial report announcement.*”

Result of analysis shows that ROA of Growth Company is bigger than Non-Growth Firm, ROA of Growth Company is 0.0917 and ROA of Non-Growth Company is 0.0783. This case is not different from previous finding that is said ROA of Growth Company will be bigger than ROA Non-Growth Company. In multicollinearity and homogeneity tests, VIF's value is 1.013 and none of independent variable is significant on level 5%.

Result of *multivariate* test shows the coefficient of dummy variable is 0.463 and t-value is 0.044 (significant).

According to the research findings, the researcher can explain classification of Growth and Non-Growth Company will give positive effect on *Return on Assets* (ROA). This fact is suitable to *t-test*, multicollinearity and homogeneity tests, and *multivariate* test. This fact is the same as previous study stated that *Return on Assets* (ROA) of Growth Company will bigger than Non-Growth Company, because there are future investment decisions that will encourage company to add their assets. The future investment decisions will affect the assets of the company itself and make the assets will decline. Company will add their assets every year to cover assets that are used for investments. Therefore in this research, the

researcher can draw a summary of the implication, which is this research will accept  $H_{02}$ : “*Return on Assets for Growth Company is higher than Non-Growth Company*” and will not accept  $H_{02}$ : “*Return on Assets for Growth Company is not higher than Non-Growth Company.*”

Result of analysis shows that the coefficient of dummy variable for stock price (Cumulative Abnormal Return) is 1.780 and t-value is -0.525 and the coefficient of dummy variable for company profit (Return on Assets) is 0.463 and t-value is 0.044. Therefore, the research can say that the relationship between Investment Opportunity Set and Cumulative Abnormal Return is not positive and the relationship between Investment Opportunity Set and Return on Assets is positive. Therefore in this research, the researcher can draw a summary of the implication, which is this research will not accept  $H_{03}$ : “*Stock price and Return on Assets have the positive influence to Investment Opportunity Set*” and accept  $H_{a3}$ : “*Stock price and Return on Assets have not the positive influence to Investment Opportunity Set.*”

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1. Conclusions

After analyzing the variables of *Investment Opportunity Set (IOS)*, *Cumulative Abnormal Return (CAR)*, and *Return on Assets (ROA)*, this research can draw conclusions as follows:

Result of the analysis shows that CAR of Growth Company is lower than Non-Growth Firm. This case is different from previous study that supports CAR of Growth Company which is bigger than CAR of Non-Growth Company. In multicollinearity and homogeneity tests, VIF's value is 1.013 and no independent variable is significant on level 5%. Result of *multivariate* test shows that coefficient of dummy variable and t-value is insignificant. This means that stock price changing of growth firms and non-growth firms in around time of financial report announcement is not different. Stock price movement will not be affected by classification of company. Investors do not respond classification indication of growth company based on IOS theory. Perhaps, this fact is caused by the samples that are too small in number, therefore empirical test power is weak.

Result in regression analysis shows that between Investment Opportunity Set and Cumulative Abnormal Return as the proxy of stock price has the negative relationship, but between Investment Opportunity Set and Return on Assets as the proxy of company profit has the positive relationship.

Result of analysis shows that ROA of Growth Company is bigger than Non-Growth Firm. This case is not different from previous finding that is said ROA of Growth Company will be bigger than ROA Non-Growth Company. In multicollinearity and homogeneity tests, VIF's value is 1.013 and no independent variable is significant on level 5%.

Result of *multivariate* test shows the coefficient of dummy variable and t-value is significant. This fact supports the previous study stated that *Return on Assets* (ROA) of Growth Company will be higher than Non-Growth Company, because there are future investment decisions that will encourage company to add their assets. The future investment decisions will affect the assets of the company itself and make the assets decline. Company will add their assets every year to cover asset that is used for investments.

## **5.2. Limitations and Recommendations**

Limitations of this research are:

1. Sample selection is done by purposive sampling method, not random method. Therefore, the result is difficult to use as basis of generalization;
2. This research only uses five IOS proxies, thus it is not accurate in categorizing *growth firms* and *non-growth firms*;
3. Most of companies have negative *Cumulative Abnormal Return*. Therefore, it is difficult to measure the movement of stock price of each company.

Some recommendations that can be given by the researcher for future research and for companies are:

1. The future research hopefully can use more sample in the research. The use of more sample is supposed to get the more accurate result;
2. Future IOS research hopefully can use time series and more IOS proxy in categorizing *growth firms* and *non-growth firms*;
3. Future research in IOS hopefully will explore about the relationship between IOS and corporate governance.
4. For the company, to increase the abnormal return or cumulative abnormal return, to predict the movement of the stock price.

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**APPENDIX 1:**  
**LIST OF COMPANY ON LQ 45**  
**INDEX**

## LIST OF COMPANY ON LQ 45 YEAR 2001 SEMESTER 1

Date	Code	Company
2/2/2001	CMNP	CITRA MARGA NP TBK
2/2/2001	ASGR	ASTRA GRAPHIA TBK
2/2/2001	ASII	ASTRA INTERNATIONAL TBK
2/2/2001	BMTR	BIMANTARA CITRA TBK
2/2/2001	CPIN	CHAROEN POKPHAND INDONESIA TBK
2/2/2001	FASW	FAJAR SURYA WISESA TBK
2/2/2001	GGRM	GUDANG GARAM TBK
2/2/2001	GJTL	GAJAH TUNGGAL TBK
2/2/2001	HMSP	H M SAMPOERNA TBK
2/2/2001	INDF	INDOFOOD SUKSES MAKMUR TBK
2/2/2001	INKP	INDAH KIAT PULP & PAPER TBK
2/2/2001	INTP	INDOCEMENT TUNGGAL PERKASA TBK
2/2/2001	ISAT	INDOSAT TBK
2/2/2001	JIHD	JAKARTA INT L HOTEL & DEV. TBK
2/2/2001	KLBF	KALBE FARMA TBK
2/2/2001	KOMI	KOMATSU INDONESIA TBK
2/2/2001	LPBN	LIPPO BANK TBK
2/2/2001	LPLI	LIPPO LIFE INSURANCE TBK
2/2/2001	LPPS	LIPPO SECURITIES TBK
2/2/2001	MEDC	MEDCO ENERGI CORPORATION TBK
2/2/2001	MLIA	MULIA INDUSTRINDO TBK
2/2/2001	MLPL	MULTIPOLAR TBK
2/2/2001	MPPA	MATAHARI PUTRA PRIMA TBK
2/2/2001	MTDL	METRODATA ELECTRONICS TBK
2/2/2001	PNBN	PANIN BANK TBK
2/2/2001	RMBA	RIMBA NIAGA IDOLA TBK
2/2/2001	SMCB	SEMEN CIBINONG TBK
2/2/2001	SMGR	SEMEN GRESIK TBK
2/2/2001	TINS	TAMBANG TIMAH (PERSERO) TBK
2/2/2001	TKIM	TJIWI KIMIA TBK
2/2/2001	TLKM	TELEKOMUNIKASI INDONESIA TBK
2/2/2001	TSPC	TEMPO SCAN PACIFIC TBK
2/2/2001	ULTJ	ULTRA JAYA MILK TBK
2/2/2001	UNTR	UNITED TRACTORS TBK
2/2/2001	RALS	RAMAYANA LESTARI SENTOSA TBK
2/2/2001	BCIC	BANK CENTURY INTERVEST CORP. TBK
2/2/2001	ANTM	ANEKA TAMBANG (PERSERO) TBK
2/2/2001	AALI	ASTRA AGRO LESTARI TBK
2/2/2001	BHIT	BHAKTI INVESTAMA TBK
2/2/2001	MKDO	MAKINDO TBK
2/2/2001	AUTO	ASTRA OTOPARTS TBK
2/2/2001	ALFA	ALFA RETAILNDO TBK
2/2/2001	BASS	BAHTERA ADIMINA SAMUDRA TBK
2/2/2001	BBCA	BANK CENTRAL ASIA TBK.
2/2/2001	TRIM	TRIMEGAH SECURITIES TBK

## LIST OF COMPANY ON LQ 45 YEAR 2001 SEMESTER 2

Date	Code	Company
8/2/2001	CMNP	CITRA MARGA NP TBK
8/2/2001	ASGR	ASTRA GRAPHIA TBK
8/2/2001	ASII	ASTRA INTERNATIONAL TBK
8/2/2001	BMTR	BIMANTARA CITRA TBK
8/2/2001	DYNA	DYNAPLAST TBK
8/2/2001	FASW	FAJAR SURYA WISESA TBK
8/2/2001	GGRM	GUDANG GARAM TBK
8/2/2001	GJTL	GAJAH TUNGGAL TBK
8/2/2001	HMSP	H M SAMPOERNA TBK
8/2/2001	INDF	INDOFOOD SUKSES MAKMUR TBK
8/2/2001	INDR	INDORAMA SYNTETICS TBK
8/2/2001	INTP	INDOCEMENT TUNGGAL PERKASA TBK
8/2/2001	ISAT	INDOSAT TBK
8/2/2001	KLBF	KALBE FARMA TBK
8/2/2001	LPBN	LIPPO BANK TBK
8/2/2001	LPLI	LIPPO LIFE INSURANCE TBK
8/2/2001	LPPS	LIPPO SECURITIES TBK
8/2/2001	MEDC	MEDCO ENERGI CORPORATION TBK
8/2/2001	MLIA	MULIA INDUSTRIINDO TBK
8/2/2001	MLPL	MULTIPOLAR TBK
8/2/2001	MPPA	MATAHARI PUTRA PRIMA TBK
8/2/2001	MTDL	METRODATA ELECTRONICS TBK
8/2/2001	MYOR	MAYORA INDAH TBK
8/2/2001	PNBN	PANIN BANK TBK
8/2/2001	RMBA	RIMBA NIAGA IDOLA TBK
8/2/2001	SMAR	SMART CORPORATION TBK
8/2/2001	SMGR	SEMEN GRESIK TBK
8/2/2001	TINS	TAMBANG TIMAH (PERSERO) TBK
8/2/2001	TLKM	TELEKOMUNIKASI INDONESIA TBK
8/2/2001	TSPC	TEMPO SCAN PACIFIC TBK
8/2/2001	ULTJ	ULTRA JAYA MILK TBK
8/2/2001	UNTR	UNITED TRACTORS TBK
8/2/2001	UNVR	UNILEVER INDONESIA TBK
8/2/2001	RALS	RAMAYANA LESTARI SENTOSA TBK
8/2/2001	ANTM	ANEKA TAMBANG (PERSERO) TBK
8/2/2001	AALI	ASTRA AGRO LESTARI TBK
8/2/2001	BHIT	BHAKTI INVESTAMA TBK
8/2/2001	MKDO	MAKINDO TBK
8/2/2001	AUTO	ASTRA OTOPARTS TBK
8/2/2001	ALFA	ALFA RETAILINDO TBK
8/2/2001	BBCA	BANK CENTRAL ASIA TBK.
8/2/2001	DSFI	DHARMA SAMUDERA FISHING INDUSTRIES TBK
8/2/2001	TRIM	TRIMEGAH SECURITIES TBK
8/2/2001	TMPO	TEMPO INTI MEDIA TBK
8/2/2001	IDSR	INDOSIAR VISUAL TBK

## LIST OF COMPANY ON LQ 45 YEAR 2002 SEMESTER 1

Date	Code	Company
2/8/2002	CMNP	CITRA MARGA NP TBK
2/8/2002	ASGR	ASTRA GRAPHIA TBK
2/8/2002	ASII	ASTRA INTERNATIONAL TBK
2/8/2002	BLTA	BERLIAN LAJU TANKER TBK
2/8/2002	BMTR	BIMANTARA CITRA TBK
2/8/2002	DNKS	DANKOS LABORATORIES TBK
2/8/2002	GGRM	GUDANG GARAM TBK
2/8/2002	GJTL	GAJAH TUNGGAL TBK
2/8/2002	HMSP	H M SAMPOERNA TBK
2/8/2002	INDF	INDOFOOD SUKSES MAKMUR TBK
2/8/2002	INDR	INDORAMA SYNTETICS TBK
2/8/2002	INTP	INDOCEMENT TUNGGAL PERKASA TBK
2/8/2002	ISAT	INDOSAT TBK
2/8/2002	JIHD	JAKARTA INT L HOTEL & DEV. TBK
2/8/2002	KLBF	KALBE FARMA TBK
2/8/2002	KOMI	KOMATSU INDONESIA TBK
2/8/2002	MEDC	MEDCO ENERGI CORPORATION TBK
2/8/2002	MLPL	MULTIPOLAR TBK
2/8/2002	MPPA	MATAHARI PUTRA PRIMA TBK
2/8/2002	MTDL	METRODATA ELECTRONICS TBK
2/8/2002	PNBN	PANIN BANK TBK
2/8/2002	RMBA	RIMBA NIAGA IDOLA TBK
2/8/2002	SMAR	SMART CORPORATION TBK
2/8/2002	SMCB	SEMEN CIBINONG TBK
2/8/2002	SMGR	SEMEN GRESIK TBK
2/8/2002	TINS	TAMBANG TIMAH (PERSERO) TBK
2/8/2002	TLKM	TELEKOMUNIKASI INDONESIA TBK
2/8/2002	TSPC	TEMPO SCAN PACIFIC TBK
2/8/2002	ULTJ	ULTRA JAYA MILK TBK
2/8/2002	UNTR	UNITED TRACTORS TBK
2/8/2002	UNVR	UNILEVER INDONESIA TBK
2/8/2002	RALS	RAMAYANA LESTARI SENTOSA TBK
2/8/2002	ANTM	ANEKA TAMBANG (PERSERO) TBK
2/8/2002	AALI	ASTRA AGRO LESTARI TBK
2/8/2002	BHIT	BHAKTI INVESTAMA TBK
2/8/2002	MKDO	MAKINDO TBK
2/8/2002	AUTO	ASTRA OTOPARTS TBK
2/8/2002	ALFA	ALFA RETAILNDO TBK
2/8/2002	BBCA	BANK CENTRAL ASIA TBK.
2/8/2002	DSFI	DHARMA SAMUDERA FISHING INDUSTRIES TBK
2/8/2002	INAF	INDOFARMA TBK
2/8/2002	KOPI	KOPITIME DOT COM TBK
2/8/2002	TMPO	TEMPO INTI MEDIA TBK
2/8/2002	KAEF	KIMIA FARMA TBK
2/8/2002	IDSR	INDOSIAR VISUAL TBK

## LIST OF COMPANY ON LQ 45 YEAR 2002 SEMESTER 2

Date	Code	Company
8/8/2002	CMNP	CITRA MARGA NP TBK
8/8/2002	ASGR	ASTRA GRAPHIA TBK
8/8/2002	ASII	ASTRA INTERNATIONAL TBK
8/8/2002	BLTA	BERLIAN LAJU TANKER TBK
8/8/2002	BMTR	BIMANTARA CITRA TBK
8/8/2002	DNKS	DANKOS LABORATORIES TBK
8/8/2002	GGRM	GUDANG GARAM TBK
8/8/2002	GJTL	GAJAH TUNGGAL TBK
8/8/2002	HMSP	H M SAMPOERNA TBK
8/8/2002	INDF	INDOFOOD SUKSES MAKMUR TBK
8/8/2002	INDR	INDORAMA SYNTHETICS TBK
8/8/2002	INTP	INDOCEMENT TUNGGAL PERKASA TBK
8/8/2002	ISAT	INDOSAT TBK
8/8/2002	JIHD	JAKARTA INT L HOTEL & DEV. TBK
8/8/2002	KLBF	KALBE FARMA TBK
8/8/2002	LPBN	LIPPO BANK TBK
8/8/2002	MEDC	MEDCO ENERGI CORPORATION TBK
8/8/2002	MLPL	MULTIPOLAR TBK
8/8/2002	MPPA	MATAHARI PUTRA PRIMA TBK
8/8/2002	MTDL	METRODATA ELECTRONICS TBK
8/8/2002	PNBN	PANIN BANK TBK
8/8/2002	RMBA	RIMBA NIAGA IDOLA TBK
8/8/2002	SMCB	SEMEN CIBINONG TBK
8/8/2002	SMGR	SEMEN GRESIK TBK
8/8/2002	TINS	TAMBANG TIMAH (PERSERO) TBK
8/8/2002	TLKM	TELEKOMUNIKASI INDONESIA TBK
8/8/2002	TSPC	TEMPO SCAN PACIFIC TBK
8/8/2002	TURI	TUNAS RIDEAN TBK
8/8/2002	UNTR	UNITED TRACTORS TBK
8/8/2002	UNVR	UNILEVER INDONESIA TBK
8/8/2002	RALS	RAMAYANA LESTARI SENTOSA TBK
8/8/2002	BBNI	BANK NEGARA INDONESIA TBK
8/8/2002	ANTM	ANEKA TAMBANG (PERSERO) TBK
8/8/2002	AALI	ASTRA AGRO LESTARI TBK
8/8/2002	BHIT	BHAKTI INVESTAMA TBK
8/8/2002	AUTO	ASTRA OTOPARTS TBK
8/8/2002	BBCA	BANK CENTRAL ASIA TBK.
8/8/2002	DSFI	DHARMA SAMUDERA FISHING INDUSTRIES TBK
8/8/2002	JAKA	JAKA ARTHA GRAHA TBK
8/8/2002	INAF	INDOFARMA TBK
8/8/2002	KAEF	KIMIA FARMA TBK
8/8/2002	IDSR	INDOSIAR VISUAL TBK
8/8/2002	RYAN	RYANE ADIBUSANA TBK
8/8/2002	CENT	CENTRIN ONLINE TBK.
8/8/2002	CNKO	CENTRAL KORPORINDO INT L TBK

## LIST OF COMPANY ON LQ 45 YEAR 2003 SEMESTER 1

Date	Day	Code	Company
2/3/2003	Monday	ASGR	ASTRA GRAPHIA TBK
2/3/2003	Monday	ASII	ASTRA INTERNATIONAL TBK
2/3/2003	Monday	BLTA	BERLIAN LAJU TANKER TBK
2/3/2003	Monday	BMTR	BIMANTARA CITRA TBK
2/3/2003	Monday	DNKS	DANKOS LABORATORIES TBK
2/3/2003	Monday	DYNA	DYNAPLAST TBK
2/3/2003	Monday	GGRM	GUDANG GARAM TBK
2/3/2003	Monday	GJTL	GAJAH TUNGGAL TBK
2/3/2003	Monday	HMSP	H M SAMPOERNA TBK
2/3/2003	Monday	INDF	INDOFOOD SUKSES MAKMUR TBK
2/3/2003	Monday	INDR	INDORAMA SYNTETICS TBK
2/3/2003	Monday	INKP	INDAH KIAT PULP & PAPER TBK
2/3/2003	Monday	INTP	INDOCEMENT TUNGGAL PERKASA TBK
2/3/2003	Monday	ISAT	INDOSAT TBK
2/3/2003	Monday	JIHD	JAKARTA INT L HOTEL & DEV. TBK
2/3/2003	Monday	KLBF	KALBE FARMA TBK
2/3/2003	Monday	MEDC	MEDCO ENERGI CORPORATION TBK
2/3/2003	Monday	MLPL	MULTIPOLAR TBK
2/3/2003	Monday	MPPA	MATAHARI PUTRA PRIMA TBK
2/3/2003	Monday	MTDL	METRODATA ELECTRONICS TBK
2/3/2003	Monday	PNBN	PANIN BANK TBK
2/3/2003	Monday	RMBA	RIMBA NIAGA IDOLA TBK
2/3/2003	Monday	SMCB	SEMEN CIBINONG TBK
2/3/2003	Monday	SMGR	SEMEN GRESIK TBK
2/3/2003	Monday	TINS	TAMBANG TIMAH (PERSERO) TBK
2/3/2003	Monday	TLKM	TELEKOMUNIKASI INDONESIA TBK
2/3/2003	Monday	TSPC	TEMPO SCAN PACIFIC TBK
2/3/2003	Monday	TURI	TUNAS RIDEAN TBK
2/3/2003	Monday	UNTR	UNITED TRACTORS TBK
2/3/2003	Monday	UNVR	UNILEVER INDONESIA TBK
2/3/2003	Monday	RALS	RAMAYANA LESTARI SENTOSA TBK
2/3/2003	Monday	BBNI	BANK NEGARA INDONESIA TBK
2/3/2003	Monday	ANTM	ANEKA TAMBANG (PERSERO) TBK
2/3/2003	Monday	AALI	ASTRA AGRO LESTARI TBK
2/3/2003	Monday	BHIT	BHAKTI INVESTAMA TBK
2/3/2003	Monday	HITS	HUMPUSS INTERMODA TRANSPORTASI TBK
2/3/2003	Monday	AUTO	ASTRA OTOPARTS TBK
2/3/2003	Monday	BBCA	BANK CENTRAL ASIA TBK.
2/3/2003	Monday	JAKA	JAKA ARTHA GRAHA TBK
2/3/2003	Monday	INAF	INDOFARMA TBK
2/3/2003	Monday	KAEF	KIMIA FARMA TBK
2/3/2003	Monday	IDSR	INDOSIAR VISUAL TBK
2/3/2003	Monday	LMAS	LIMAS STOKHOMINDO TBK
2/3/2003	Monday	APEX	APEXINDO PRATAMA DUTA TBK
2/3/2003	Monday	SCMA	SURYA CITRA MEDIA TBK

## LIST OF COMPANY ON LQ 45 YEAR 2003 SEMESTER 2

Date	Code	Company
8/6/2003	CMNP	CITRA MARGA NP TBK
8/6/2003	ASGR	ASTRA GRAPHIA TBK
8/6/2003	ASII	ASTRA INTERNATIONAL TBK
8/6/2003	BMTR	BIMANTARA CITRA TBK
8/6/2003	DNKS	DANKOS LABORATORIES TBK
8/6/2003	DYNA	DYNAPLAST TBK
8/6/2003	GGRM	GUDANG GARAM TBK
8/6/2003	GJTL	GAJAH TUNGGAL TBK
8/6/2003	HMSP	H M SAMPOERNA TBK
8/6/2003	INCO	INCO TBK
8/6/2003	INDF	INDOFOOD SUKSES MAKMUR TBK
8/6/2003	INDR	INDORAMA SYNTETICS TBK
8/6/2003	INKP	INDAH KIAT PULP & PAPER TBK
8/6/2003	INTP	INDOCEMENT TUNGGAL PERKASA TBK
8/6/2003	ISAT	INDOSAT TBK
8/6/2003	JIHD	JAKARTA INT L HOTEL & DEV. TBK
8/6/2003	KLBF	KALBE FARMA TBK
8/6/2003	MEDC	MEDCO ENERGI CORPORATION TBK
8/6/2003	MLPL	MULTIPOLAR TBK
8/6/2003	MPPA	MATAHARI PUTRA PRIMA TBK
8/6/2003	NISP	BANK NISP TBK
8/6/2003	PNBN	PANIN BANK TBK
8/6/2003	RMBA	RIMBA NIAGA IDOLA TBK
8/6/2003	SMCB	SEMEN CIBINONG TBK
8/6/2003	SMGR	SEMEN GRESIK TBK
8/6/2003	TINS	TAMBANG TIMAH (PERSERO) TBK
8/6/2003	TKIM	TJIWI KIMIA TBK
8/6/2003	TLKM	TELEKOMUNIKASI INDONESIA TBK
8/6/2003	TSPC	TEMPO SCAN PACIFIC TBK
8/6/2003	UNTR	UNITED TRACTORS TBK
8/6/2003	UNVR	UNILEVER INDONESIA TBK
8/6/2003	RALS	RAMAYANA LESTARI SENTOSA TBK
8/6/2003	BBNI	BANK NEGARA INDONESIA TBK
8/6/2003	ANTM	ANEKA TAMBANG (PERSERO) TBK
8/6/2003	AALI	ASTRA AGRO LESTARI TBK
8/6/2003	AUTO	ASTRA OTOPARTS TBK
8/6/2003	BBCA	BANK CENTRAL ASIA TBK.
8/6/2003	INAF	INDOFARMA TBK
8/6/2003	KAEF	KIMIA FARMA TBK
8/6/2003	IDSR	INDOSIAR VISUAL TBK
8/6/2003	LMAS	LIMAS STOKHOMINDO TBK
8/6/2003	APEX	APEXINDO PRATAMA DUTA TBK
8/6/2003	SCMA	SURYA CITRA MEDIA TBK
8/6/2003	BKSW	BANK KESAWAN TBK
8/6/2003	PTBA	TAMBANG BATUBARA BUKIT ASAMTBK



## LIST OF COMPANY ON LQ 45 YEAR 2004 SEMESTER 1

Date	Day	Code	Company
2/3/2004	Tuesday	ASGR	ASTRA GRAPHIA TBK
2/3/2004	Tuesday	ASII	ASTRA INTERNATIONAL TBK
2/3/2004	Tuesday	BLTA	BERLIAN LAJU TANKER TBK
2/3/2004	Tuesday	BNBR	BAKRIE & BROTHERS TBK
2/3/2004	Tuesday	BRPT	BARITO PACIFIC TIMBER TBK
2/3/2004	Tuesday	BUMI	BUMI MODERN HYATT TBK
2/3/2004	Tuesday	DNKS	DANKOS LABORATORIES TBK
2/3/2004	Tuesday	EPMT	ENSEVAL PUTRA MEGATRADING TBK
2/3/2004	Tuesday	GGRM	GUDANG GARAM TBK
2/3/2004	Tuesday	GJTL	GAJAH TUNGGAL TBK
2/3/2004	Tuesday	HMSP	H M SAMPOERNA TBK
2/3/2004	Tuesday	INCO	INCO TBK
2/3/2004	Tuesday	INDF	INDOFOOD SUKSES MAKMUR TBK
2/3/2004	Tuesday	INKP	INDAH KIAT PULP & PAPER TBK
2/3/2004	Tuesday	INTP	INDOCEMENT TUNGGAL PERKASA TBK
2/3/2004	Tuesday	ISAT	INDOSAT TBK
2/3/2004	Tuesday	JIHD	JAKARTA INT L HOTEL & DEV. TBK
2/3/2004	Tuesday	KLBF	KALBE FARMA TBK
2/3/2004	Tuesday	MEDC	MEDCO ENERGI CORPORATION TBK
2/3/2004	Tuesday	MPPA	MATAHARI PUTRA PRIMA TBK
2/3/2004	Tuesday	NISP	BANK NISP TBK
2/3/2004	Tuesday	PNBN	PANIN BANK TBK
2/3/2004	Tuesday	PNIN	PANIN INSURANCE TBK
2/3/2004	Tuesday	RMBA	RIMBA NIAGA IDOLA TBK
2/3/2004	Tuesday	SMCB	SEMEN CIBINONG TBK
2/3/2004	Tuesday	SMGR	SEMEN GRESIK TBK
2/3/2004	Tuesday	SMRA	SUMMARECON AGUNG TBK
2/3/2004	Tuesday	TINS	TAMBANG TIMAH (PERSERO) TBK
2/3/2004	Tuesday	TKIM	TJIWI KIMIA TBK
2/3/2004	Tuesday	TLKM	TELEKOMUNIKASI INDONESIA TBK
2/3/2004	Tuesday	TRST	TRIAS SENTOSA TBK
2/3/2004	Tuesday	TSPC	TEMPO SCAN PACIFIC TBK
2/3/2004	Tuesday	UNTR	UNITED TRACTORS TBK
2/3/2004	Tuesday	UNVR	UNILEVER INDONESIA TBK
2/3/2004	Tuesday	RALS	RAMAYANA LESTARI SENTOSA TBK
2/3/2004	Tuesday	BBNI	BANK NEGARA INDONESIA TBK
2/3/2004	Tuesday	ANTM	ANEKA TAMBANG (PERSERO) TBK
2/3/2004	Tuesday	AALI	ASTRA AGRO LESTARI TBK
2/3/2004	Tuesday	AUTO	ASTRA OTOPARTS TBK
2/3/2004	Tuesday	BBCA	BANK CENTRAL ASIA TBK.
2/3/2004	Tuesday	INAF	INDOFARMA TBK
2/3/2004	Tuesday	KAEF	KIMIA FARMA TBK
2/3/2004	Tuesday	IDSR	INDOSIAR VISUAL TBK
2/3/2004	Tuesday	LMAS	LIMAS STOKHOMINDO TBK
2/3/2004	Tuesday	PTBA	TAMBANG BATUBARA BUKIT ASAMTBK

## LIST OF COMPANY ON LQ 45 YEAR 2004 SEMESTER 2

Date	Code	Company
8/2/2004	ASII	ASTRA INTERNATIONAL TBK
8/2/2004	BDMN	BANK DANAMON TBK
8/2/2004	BLTA	BERLIAN LAJU TANKER TBK
8/2/2004	BNBR	BAKRIE & BROTHERS TBK
8/2/2004	BNGA	BANK NIAGA TBK
8/2/2004	BNII	BANK INTERNATIONAL INDONESIA TBK
8/2/2004	BRPT	BARITO PACIFIC TIMBER TBK
8/2/2004	BUMI	BUMI MODERN HYATT TBK
8/2/2004	DNKS	DANKOS LABORATORIES TBK
8/2/2004	EPMT	ENSEVAL PUTRA MEGATRADING TBK
8/2/2004	GGRM	GUDANG GARAM TBK
8/2/2004	GJTL	GAJAH TUNGGAL TBK
8/2/2004	HMSP	H M SAMPOERNA TBK
8/2/2004	INCO	INCO TBK
8/2/2004	INDF	INDOFOOD SUKSES MAKMUR TBK
8/2/2004	INKP	INDAH KIAT PULP & PAPER TBK
8/2/2004	INTP	INDOCEMENT TUNGGAL PERKASA TBK
8/2/2004	ISAT	INDOSAT TBK
8/2/2004	JIHD	JAKARTA INT L HOTEL & DEV. TBK
8/2/2004	KIJA	KAWASAN INDUSTRI JABABEKA TBK
8/2/2004	KLBF	KALBE FARMA TBK
8/2/2004	LPBN	LIPPO BANK TBK
8/2/2004	MPPA	MATAHARI PUTRA PRIMA TBK
8/2/2004	NISP	BANK NISP TBK
8/2/2004	PNBN	PANIN BANK TBK
8/2/2004	PNIN	PANIN INSURANCE TBK
8/2/2004	RMBA	RIMBA NIAGA IDOLA TBK
8/2/2004	SMCB	SEMEN CIBINONG TBK
8/2/2004	SMGR	SEMEN GRESIK TBK
8/2/2004	SMRA	SUMMARECON AGUNG TBK
8/2/2004	TINS	TAMBANG TIMAH (PERSERO) TBK
8/2/2004	TKIM	TJIWI KIMIA TBK
8/2/2004	TLKM	TELEKOMUNIKASI INDONESIA TBK
8/2/2004	TSPC	TEMPO SCAN PACIFIC TBK
8/2/2004	UNTR	UNITED TRACTORS TBK
8/2/2004	UNVR	UNILEVER INDONESIA TBK
8/2/2004	RALS	RAMAYANA LESTARI SENTOSA TBK
8/2/2004	ANTM	ANEKA TAMBANG (PERSERO) TBK
8/2/2004	AALI	ASTRA AGRO LESTARI TBK
8/2/2004	AUTO	ASTRA OTOPARTS TBK
8/2/2004	BBCA	BANK CENTRAL ASIA TBK.
8/2/2004	CTRS	CIPUTRA SURYA TBK
8/2/2004	IDSR	INDOSIAR VISUAL TBK
8/2/2004	LMAS	LIMAS STOKHOMINDO TBK
8/2/2004	PTBA	TAMBANG BATUBARA BUKIT ASAMTBK

## LIST OF COMPANY ON LQ 45 YEAR 2005 SEMESTER 1

Date	Code	Company
2/4/2005	ASII	ASTRA INTERNATIONAL TBK
2/4/2005	BDMN	BANK DANAMON TBK
2/4/2005	BFIN	BUNAS FINANCE INDONESIA TBK
2/4/2005	BNBR	BAKRIE & BROTHERS TBK
2/4/2005	BNGA	BANK NIAGA TBK
2/4/2005	BNII	BANK INTERNATIONAL INDONESIA TBK
2/4/2005	BRPT	BARITO PACIFIC TIMBER TBK
2/4/2005	BUMI	BUMI MODERN HYATT TBK
2/4/2005	ELTY	ELANG REALTY TBK
2/4/2005	EPMT	ENSEVAL PUTRA MEGATRADING TBK
2/4/2005	GGRM	GUDANG GARAM TBK
2/4/2005	GJTL	GAJAH TUNGGAL TBK
2/4/2005	HMSP	H M SAMPOERNA TBK
2/4/2005	INCO	INCO TBK
2/4/2005	INDF	INDOFOOD SUKSES MAKMUR TBK
2/4/2005	INKP	INDAH KIAT PULP & PAPER TBK
2/4/2005	INTP	INDOCEMENT TUNGGAL PERKASA TBK
2/4/2005	ISAT	INDOSAT TBK
2/4/2005	JIHD	JAKARTA INT L HOTEL & DEV. TBK
2/4/2005	KIJA	KAWASAN INDUSTRI JABABEKA TBK
2/4/2005	KLBF	KALBE FARMA TBK
2/4/2005	MEDC	MEDCO ENERGI CORPORATION TBK
2/4/2005	PNBN	PANIN BANK TBK
2/4/2005	RMBA	RIMBA NIAGA IDOLA TBK
2/4/2005	SMCB	SEMEN CIBINONG TBK
2/4/2005	TINS	TAMBANG TIMAH (PERSERO) TBK
2/4/2005	TKIM	TJIWI KIMIA TBK
2/4/2005	TLKM	TELEKOMUNIKASI INDONESIA TBK
2/4/2005	UNSP	BAKRIE SUMATRA PLANTATION TBK
2/4/2005	UNTR	UNITED TRACTORS TBK
2/4/2005	UNVR	UNILEVER INDONESIA TBK
2/4/2005	LSIP	PP LONDON SUMATRA INDONESIA TBK
2/4/2005	RALS	RAMAYANA LESTARI SENTOSA TBK
2/4/2005	ANTM	ANEKA TAMBANG (PERSERO) TBK
2/4/2005	AALI	ASTRA AGRO LESTARI TBK
2/4/2005	BBCA	BANK CENTRAL ASIA TBK.
2/4/2005	CTRS	CIPUTRA SURYA TBK
2/4/2005	TRIM	TRIMEGAH SECURITIES TBK
2/4/2005	PLAS	PLASTPACK PRIMA INDUSTRI TBK
2/4/2005	PTBA	TAMBANG BATUBARA BUKIT ASAMTBK
2/4/2005	BMRI	BANK MANDIRI (PERSERO) TBK
2/4/2005	BBRI	975
2/4/2005	PGAS	PERUSAHAAN GAS NEGARA TBK
2/4/2005	ADHI	ADHI KARYA (PERSERO) TBK
2/4/2005	ENRG	ENERGI MEGA PERSADA TBK

## LIST OF COMPANY ON LQ 45 YEAR 2005 SEMESTER 2

Date	Code	Company
8/4/2005	CMNP	CITRA MARGA NP TBK
8/4/2005	ADMG	ANDAYANI MEGAH TBK
8/4/2005	ASII	ASTRA INTERNATIONAL TBK
8/4/2005	BDMN	BANK DANAMON TBK
8/4/2005	BLTA	BERLIAN LAJU TANKER TBK
8/4/2005	BNBR	BAKRIE & BROTHERS TBK
8/4/2005	BNGA	BANK NIAGA TBK
8/4/2005	BNII	BANK INTERNATIONAL INDONESIA TBK
8/4/2005	BNLI	BANK BALI TBK
8/4/2005	BRPT	BARITO PACIFIC TIMBER TBK
8/4/2005	BUMI	BUMI MODERN HYATT TBK
8/4/2005	GGRM	GUDANG GARAM TBK
8/4/2005	GJTL	GAJAH TUNGGAL TBK
8/4/2005	INCO	INCO TBK
8/4/2005	INDF	INDOFOOD SUKSES MAKMUR TBK
8/4/2005	INKP	INDAH KIAT PULP & PAPER TBK
8/4/2005	INTP	INDOCEMENT TUNGGAL PERKASA TBK
8/4/2005	ISAT	INDOSAT TBK
8/4/2005	JIHD	JAKARTA INT L HOTEL & DEV. TBK
8/4/2005	KIJA	KAWASAN INDUSTRI JABABEKA TBK
8/4/2005	KLBF	KALBE FARMA TBK
8/4/2005	LPBN	LIPPO BANK TBK
8/4/2005	MEDC	MEDCO ENERGI CORPORATION TBK
8/4/2005	PNBN	PANIN BANK TBK
8/4/2005	PNLF	PANIN LIFE TBK
8/4/2005	SMCB	SEMEN CIBINONG TBK
8/4/2005	SMRA	SUMMARECON AGUNG TBK
8/4/2005	TINS	TAMBANG TIMAH (PERSERO) TBK
8/4/2005	TKIM	TJIWI KIMIA TBK
8/4/2005	TLKM	TELEKOMUNIKASI INDONESIA TBK
8/4/2005	UNSP	BAKRIE SUMATRA PLANTATION TBK
8/4/2005	UNTR	UNITED TRACTORS TBK
8/4/2005	UNVR	UNILEVER INDONESIA TBK
8/4/2005	LSIP	PP LONDON SUMATRA INDONESIA TBK
8/4/2005	RALS	RAMAYANA LESTARI SENTOSA TBK
8/4/2005	ANTM	ANEKA TAMBANG (PERSERO) TBK
8/4/2005	AALI	ASTRA AGRO LESTARI TBK
8/4/2005	BBCA	BANK CENTRAL ASIA TBK.
8/4/2005	PLAS	PLASTPACK PRIMA INDUSTRI TBK
8/4/2005	PTBA	TAMBANG BATUBARA BUKIT ASAMTBK
8/4/2005	BMRI	BANK MANDIRI (PERSERO) TBK
8/4/2005	BBRI	BANK RAKYAT INDONESIA TBK
8/4/2005	PGAS	PERUSAHAAN GAS NEGARA TBK
8/4/2005	ADHI	ADHI KARYA (PERSERO) TBK
8/4/2005	ENRG	ENERGI MEGA PERSADA TBK

**APPENDIX 2:  
INVESTMENT OPPORTUNITY  
SET**

## INVESTMENT OPPORTUNITY SET PROXIES

### MVEBVE

Company	2001	2002	2003	2004	2005	Average
ANEKA TAMBANG (PERSERO) TBK	0.68	0.68	2.06	1.35	2.25	1.404
ASTRA AGRO LESTARI TBK	1.81	1.81	1.76	2.36	2.94	2.136
ASTRA INTERNATIONAL TBK	1.26	1.26	1.86	2.55	2.15	1.816
BANK CENTRAL ASIA TBK.	0.65	0.65	1.61	2.63	2.64	1.636
GAJAH TUNGGAL TBK	1.59	1.59	1.31	1.22	0.87	1.316
GUDANG GARAM TBK	1.64	1.64	2.39	2.14	1.71	1.904
INDOCEMENT TUNGGAL PERKASA TBK	0.65	0.65	1.73	2.43	2.32	1.556
INDOFOOD SUKSES MAKMUR TBK	1.54	1.54	1.85	1.8	1.99	1.744
INDOSAT TBK	0.9	0.9	6.45	2.31	2.08	2.528
KALBE FARMA TBK	9.8	9.8	9.8	2.79	4.21	7.28
PANIN BANK TBK	0.77	0.77	1.15	1.49	1.54	1.144
RAMAYANA LESTARI SENTOSA TBK	2.64	2.64	4.04	3.27	3.23	3.164
TAMBANG TIMAH (PERSERO) TBK	0.13	0.13	0.96	0.69	0.6	0.502
TELEKOMUNIKASI INDONESIA TBK	2.66	2.66	7.86	5.37	5.11	4.732
UNITED TRACTORS TBK	0.43	0.43	1.32	2.09	2.55	1.364

### VPPE

Company	2001	2002	2003	2004	2005	Average
ANEKA TAMBANG (PERSERO) TBK	1.54	1.65	7.13	2.57	2.66	3.11
ASTRA AGRO LESTARI TBK	1.42	1.88	4.3	5.83	6.41	3.968
ASTRA INTERNATIONAL TBK	4.1	5.08	5.89	7.19	6	5.652
BANK CENTRAL ASIA TBK.	47.91	58.27	74.45	88.63	86.82	71.216
GAJAH TUNGGAL TBK	2.65	1.86	1.93	2.1	0.15	1.738
GUDANG GARAM TBK	9.98	5.71	6.59	4.97	4.29	6.308
INDOCEMENT TUNGGAL PERKASA TBK	1.34	1.18	1.65	2.11	2.3	1.716
INDOFOOD SUKSES MAKMUR TBK	2.72	3.04	3.22	3.15	3.15	3.056
INDOSAT TBK	2.23	1.78	2.09	2.58	2.2	2.176
KALBE FARMA TBK	5.92	5.66	10.91	10.23	9.12	8.368
PANIN BANK TBK	17.67	12.57	17.77	20.88	29.9	19.758
RAMAYANA LESTARI SENTOSA TBK	12.81	9.41	13.92	4.29	3.12	8.71
TAMBANG TIMAH (PERSERO) TBK	0.98	1.24	1.38	4.49	4.35	2.488
TELEKOMUNIKASI INDONESIA TBK	2.48	2.35	2.87	2.11	2.12	2.386
UNITED TRACTORS TBK	3.68	2.98	3.34	4.27	3.94	3.642

### PER

Company	2001	2002	2003	2004	2005	Average
ANEKA TAMBANG (PERSERO) TBK	15.64	10.31	9.48	6.09	9.76	10.256
ASTRA AGRO LESTARI TBK	27.97	4.18	25.15	9.91	15.39	16.52
ASTRA INTERNATIONAL TBK	5.86	2.26	4.56	7.19	7.57	5.488
BANK CENTRAL ASIA TBK.	249.61	26.59	10.144	7.27	13.34	61.3908
GAJAH TUNGGAL TBK	-0.35	0.19	2.06	4.31	5.12	2.266
GUDANG GARAM TBK	-40.82	2.39	11.67	97.56	17.67	17.694
INDOCEMENT TUNGGAL PERKASA TBK	2.34	1.57	5.74	5.89	9.96	5.1
INDOFOOD SUKSES MAKMUR TBK	1.41	2.96	8.53	11.45	11.64	7.198

INDOSAT TBK	2.75	6.45	16.21	4.06	8.1	7.514
KALBE FARMA TBK	5.88	12.93	16.8	5.87	8.52	10
PANIN BANK TBK	6.74	28.49	9.89	18.61	18.31	16.408
RAMAYANA LESTARI SENTOSA TBK	11.7	11.8	20.13	17.4	18.84	15.974
TAMBANG TIMAH (PERSERO) TBK	7.59	4.83	11.18	14.71	14.88	10.638
TELEKOMUNIKASI INDONESIA TBK	7.67	7.02	12.52	19.53	69.3	23.208
UNITED TRACTORS TBK	7.97	7.65	14.23	14.56	11.86	11.254

**MVABVA**

Company	2001	2002	2003	2004	2005	Average
ANEKA TAMBANG (PERSERO) TBK	0.63	0.68	2.51	1.13	1.59	1.308
ASTRA AGRO LESTARI TBK	1.1	1.4	1.4	1.83	2.6	1.666
ASTRA INTERNATIONAL TBK	1.08	1.06	1.3	1.057	1.4	1.1794
BANK CENTRAL ASIA TBK.	0.98	1.02	1.05	1.14	1.17	1.072
GAJAH TUNGGAL TBK	1.25	1.02	1.03	1.05	0.65	1
GUDANG GARAM TBK	1.62	1.4	1.87	1.67	1.42	1.596
INDOCEMENT TUNGGAL PERKASA TBK	0.98	0.88	1.32	1.68	1.7	1.312
INDOFOOD SUKSES MAKMUR TBK	1.16	1.12	1.22	1.21	1.28	1.198
INDOSAT TBK	0.95	0.95	1.12	1.59	1.45	1.212
KALBE FARMA TBK	1.36	1.31	2.31	1.67	1.65	1.66
PANIN BANK TBK	0.89	0.94	1.03	0.93	0.96	0.95
RAMAYANA LESTARI SENTOSA TBK	2.15	1.95	2.81	0.77	0.74	1.684
TAMBANG TIMAH (PERSERO) TBK	0.335	0.32	0.29	0.8	0.77	0.503
TELEKOMUNIKASI INDONESIA TBK	1.7	1.54	2	1.5	1.58	1.664
UNITED TRACTORS TBK	0.96	0.89	1.07	1.49	1.59	1.2

**CAPBVA**

Company	2001	2002	2003	2004	2005	Average
ANEKA TAMBANG (PERSERO) TBK	0.51	0.39	0.19	0.24	0.32	0.33
ASTRA AGRO LESTARI TBK	0.12	0.2	0.26	0.37	0.57	0.304
ASTRA INTERNATIONAL TBK	0.04	0.19	0.32	0.33	0.36	0.248
BANK CENTRAL ASIA TBK.	0.08	0.08	0.08	0.08	0.09	0.082
GAJAH TUNGGAL TBK	-0.32	-0.09	-0.02	0.01	0.17	-0.05
GUDANG GARAM TBK	0.53	0.56	0.57	0.54	0.54	0.548
INDOCEMENT TUNGGAL PERKASA TBK	0.07	0.17	0.26	0.28	0.35	0.226
INDOFOOD SUKSES MAKMUR TBK	0.2	0.17	0.2	0.2	0.22	0.198
INDOSAT TBK	0.45	0.45	0.44	0.45	0.42	0.442
KALBE FARMA TBK	-0.09	0.04	0.17	0.28	0.39	0.158
PANIN BANK TBK	0.08	0.12	0.11	0.12	0.07	0.1
RAMAYANA LESTARI SENTOSA TBK	0.36	0.43	0.32	0.51	0.6	0.444
TAMBANG TIMAH (PERSERO) TBK	0.64	0.54	0.55	0.52	0.46	0.542
TELEKOMUNIKASI INDONESIA TBK	0.13	0.25	0.24	0.23	0.29	0.228
UNITED TRACTORS TBK	0.06	0.11	0.18	0.35	0.31	0.202

**APPENDIX 3:**  
**RETURN ON ASSET**



## RETURN ON ASSETS

Code	Company	2001	2002	2003	2004	2005	Average
ASII	ASTRA INTERNATIONAL TBK	3.17%	13.88%	16.13%	13.80%	11.61%	12%
GGRM	GUDANG GARAM TBK	15.52%	13.50%	10.60%	8.69%	8.53%	11%
GJTL	GAJAH TUNGGAL TBK	-8.15%	30.60%	7.15%	7.54%	4.63%	8%
INDF	INDOFOOD SUKSES MAKMUR TBK	5.75%	5.26%	3.94%	2.46%	0.83%	4%
INTP	INDOCEMENT TUNGGAL PERKASA TBK	-0.52%	9.10%	6.60%	1.18%	7.02%	5%
ISAT	INDOSAT TBK	6.50%	1.52%	23.33%	5.85%	4.95%	8%
KLBF	KALBE FARMA TBK	1.73%	13.24%	9.36%	10.65%	13.81%	10%
PNBN	PANIN BANK TBK	0.01%	0.63%	2.38%	3.87%	1.37%	2%
TINS	TAMBANG TIMAH (PERSERO) TBK	1.91%	0.68%	1.84%	7.36%	3.91%	3%
TLKM	TELEKOMUNIKASI INDONESIA TBK	12.52%	18.14%	12.10%	11.77%	12.85%	13%
UNTR	UNITED TRACTORS TBK	3.68%	5.06%	5.65%	16.24%	9.88%	8%
RALS	RAMAYANA LESTARI SENTOSA TBK	14.34%	13.07%	12.06%	12.18%	12.83%	13%
ANTM	ANEKA TAMBANG (PERSERO) TBK	14.01%	7.02%	5.23%	13.40%	13.14%	11%
AALI	ASTRA AGRO LESTARI TBK	2.56%	8.78%	9.86%	23.67%	24.76%	14%
BBCA	BANK CENTRAL ASIA TBK.	3.02%	2.16%	2.74%	2.58%	3.21%	3%

**APPENDIX 4:  
CUMULATIVE ABNORMAL  
RETURN**

## CUMULATIVE ABNORMAL RETURN (CAR)

2001

COMPANY	EXPECTATION RETURN	AR	CAR
PANIN BANK	0.02439	0.01432	-0.05355
UNITED TRACTOR	0.0411	0.03103	0.04279
INDOCEMENT TUNGGAL PERKASA	0	-0.01007	0.0588
ASTRA INTERNATIONAL	0.0411	0.03103	0.05834
GAJAH TUNGGAL	0	-0.01007	0.0797
GUDANG GARAM	-0.01571	-0.02578	-0.01846
KALBE FARMA	0.01887	0.0088	0.09383
INDOFOOD	-0.03448	-0.04455	0.00925
INDOSAT	0	-0.01007	0.04069
TAMBANG TIMAH	0	-0.01007	0.09614
TELKOM	0.02632	0.01625	-0.01137
RAMAYANA	0.01905	0.01899	0.06449
ANEKA TAMBANG	0	-0.01007	-0.07409
ASTRA AGRO LESTARI	0.02083	0.01076	-0.15571
BCA BANK	0.06383	0.05376	0.07561

2002

COMPANY	EXPECTATION RETURN	AR	CAR
PANIN BANK	0.10345	0.08712	0.03211
UNITED TRACTOR	0.06977	0.05344	0.13602
INDOCEMENT TUNGGAL PERKASA	0.08333	0.067	-0.00137
ASTRA INTERNATIONAL	0.05797	0.04164	0.02147
GAJAH TUNGGAL	0.07692	0.06059	0.05611
GUDANG GARAM	0.01333	-0.003	-0.02231
KALBE FARMA	0.04545	0.02912	0.07008
INDOFOOD	0.04167	0.02534	0.00092
INDOSAT	0	-0.01633	0.12454
TAMBANG TIMAH	0	-0.00267	0.03793
TELKOM	0.00885	-0.00748	0.07246
RAMAYANA	0.03922	0.02289	-0.09584
ANEKA TAMBANG	0.07317	0.05684	0.15434
ASTRA AGRO LESTARI	0	-0.01633	0.02787
BCA BANK	0.0274	0.01107	-0.08543

## 2003

COMPANY	EXPECTATION RETURN	AR	CAR
PANIN BANK	0.01754	0.01187	0.04752
UNITED TRACTOR	0.0303	0.05378	-0.10048
INDOCEMENT TUNGGAL PERKASA	0	0.02348	0.03731
ASTRA INTERNATIONAL	-0.01563	0.00785	-0.0452
GAJAH TUNGGAL	0	0.02348	-0.20886
GUDANG GARAM	-0.01145	0.01203	0.0239
KALBE FARMA	-0.0625	-0.03902	-0.0838
INDOFOOD	0.03448	0.02881	-0.05192
INDOSAT	-0.02128	0.0022	0.04146
TAMBANG TIMAH	-0.01493	0.00855	0.01282
TELKOM	-0.032	-0.00852	0.04449
RAMAYANA	-0.00559	-0.01126	0.06664
ANEKA TAMBANG	-0.04255	-0.01907	-0.07933
ASTRA AGRO LESTARI	-0.02857	-0.00509	-0.03452
BCA BANK	-0.05844	-0.03496	-0.08654

## 2004

COMPANY	EXPECTATION RETURN	AR	CAR
PANIN BANK	-0.0274	-0.02551	-0.06411
UNITED TRACTOR	0.02778	0.02967	0.06518
INDOCEMENT TUNGGAL PERKASA	0	0.00189	0.03846
ASTRA INTERNATIONAL	-0.00633	-0.00444	-0.03758
GAJAH TUNGGAL	0	0.00189	0.0464
GUDANG GARAM	0.00791	0.0098	-0.01922
KALBE FARMA	0	0.00189	0.04687
INDOFOOD	-0.03571	-0.03382	-0.04692
INDOSAT	-0.00526	-0.00337	0.08664
TAMBANG TIMAH	-0.0119	-0.01001	-0.08681
TELKOM	0.01163	0.01352	0.04606
RAMAYANA	0	0.00189	-0.10879
ANEKA TAMBANG	0	0.00189	-0.03387
ASTRA AGRO LESTARI	0	0.00189	-0.00618
BCA BANK	0	0.00189	0.0358

2005

COMPANY	EXPECTATION RETURN	AR	CAR
PANIN BANK	0.01316	0.01584	-0.01911
UNITED TRACTOR	0	0.00268	0.04342
INDOCEMENT TUNGGAL PERKASA	-0.02344	-0.02076	0.07046
ASTRA INTERNATIONAL	-0.02128	-0.0186	-0.00084
GAJAH TUNGGAL	0	0.00268	0.01176
GUDANG GARAM	0.00513	0.00781	0.00549
KALBE FARMA	0	0.00268	0.0181
INDOFOOD	0.01316	0.01584	0.14841
INDOSAT	-0.03738	-0.0347	-0.06341
TAMBANG TIMAH	0	0.00268	0.012136
TELKOM	0	0.00268	-0.0275
RAMAYANA	-0.01389	-0.02132	-0.06728
ANEKA TAMBANG	-0.02727	-0.02459	-0.03373
ASTRA AGRO LESTARI	-0.01818	-0.0155	-0.01608
BCA BANK	0	0.00268	0.02246