ANALYZES THE INFLUENCE OF STOCK SPLIT TOWARD STOCK ABNORMAL RETURN AND STOCK TRADING VOLUME IN GO PUBLIC COMPANY REGISTERED AT PT. BURSA EFEK JAKARTA

A THESIS

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

By:

HANY MULYANI

Student Number : 99 312 008

DEPARTMENT OF ACCOUNTING

INTERNATIONAL PROGRAM

FACULTY OF ECONOMICS

UNIVERSITAS ISLAM INDONESIA

YOGYAKARTA

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MOTTO

Nothing is really difficult...
Even if something appears difficult initially,
Patiently and resolutely proceed with the job.
The case becomes easy enough after a while,
And our perseverance will be rewarded.

I dedicated this thesis to:
My beloved parents,
Drs. A.S. Hasan and Kusumastrini.
And my big brothers,
Jaka and Dewa

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All the praise and grateful only be Allah SWT, the Cherisher and Sustainer of the world, the Creator and the Owner of everything. Because it is only by His will and permission that this thesis entitle "ANALYZES THE INFLUENCE OF STOCK SPLIT TOWARD STOCK ABNORMAL RETURN AND STOCK TRADING VOLUME IN GO PUBLIC COMPANY REGISTERED AT PT. BURSA EFEK JAKARTA", presented as one of this requirements to obtain the Bachelor Degree in Accounting Department, Economic Faculty, Universitas Islam Indonesia. Completely finished and there is no word to say "Thanks God I did it".

In this opportunity I would like to express my deepest gratitude to my thesis advisor, Yunan Najamudin, Drs, MBA, for his helpful comments, advice and insight. I would also like to extend my gratitude to *mbak* Sari Hidayati, SS, my language advisor, for her encouragement and assistance in my thesis writing.

My special gratitude is to my wonderful mother, Kusumastrini for her sincerity, prayers and endless love and also my father, Drs. A.S. Hasan for supporting my education and encouragement. My gratitude goes beyond words, may the mighty Allah bless both of you. To my brothers, *mas* Jaka and *mas* Dewa, for always being ready to assist me in various endeavors for which I am truly grateful. To *tante* Tuning, thanks for always improving my language.

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I would like to convey my gratitude to all of people that always help and support me to write this thesis. I can't mention them one by one. Finally, I hope this thesis could be useful for me and the next reader.

Yogyakarta, October, 2004

Hany Mulyani

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ABSTRACT

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The presence of capital market in Indonesia already has motivated the national economic activities. In the condition to fulfill the requirement of a quite big capital, this organization will increase the alternative fund resources. The manager's motivation split their stock is to increase the number of shareholder to investment opportunity such as increasing the profit and cash dividend, return the value and the average trading shares size to the target, and to get optimal trading volume. Stock split is aimed to keep the share value not be too high and to keep that condition to optimal trading range, and eventually can increase the investor's interest to have that share, so the share could be more liquid for trading and it will hopefully increase the stock value in the future. One of reason that the market had reaction cause of stock split is because stock split has information content. The capital market is efficient if the securities price is showing relevant information. The reaction after the announcement of stock split is the change of stock price, it is possible to find the abnormal return.

The population in this research is all of companies doing stock split in period 1998-2000, and not does other corporate action. The objectives of this research are to know the difference of abnormal return and trading volume on period before and after stock split announcement. The researcher takes 5 days before and after stock split.

Testing the data with normal distribution, make smaller deviation and appropriate with Kolmogorov's result testing, where is asymp sign is more than significant level. Using t-test parametric with significance's level $\leq$ 5% (t-table=2,0369), the results are: (1) there is no significant difference of average abnormal return between periods before and after stock split is shown by t-test=0,488 < t-table, make Ho is accepted. (2) There is no significant difference of average trading volume activities between period before and after stock split is shown by t-test=-0,413 < t-table, make Ho is accepted.

From the research result can conclude that the market take the information because of stock split, so the average abnormal return after stock split will be back like the average abnormal return before stock split. Because of that, go public companies should be anticipate the market condition before stock split event, the company associate the stock split at market with the companies that will get higher return. It will make investor interest to buy the stock because the investor has positive thinking after stock split.

ABSTRAK

ANALYZES THE INFLUENCE OF STOCK SPLIT TOWARD STOCK ABNORMAL RETURN AND STOCK TRADING VOLUME IN GO PUBLIC COMPANY REGISTERED AT PT. BURSA EFEK JAKARTA

Oleh:
HANY MULYANI
Nomer Mahasiswa : 99 312 008

Kehadiran pasar modal di Indonesia telah memacu activitas perekonomian nasional. Dalam kondisi kebutuhan akan permodaln yang cukup besar, lembaqga ini menambah alternatf pilihan sumber dana. Motivasi manajer memecah sahamnya antara lain adalah meningkatkan jumlah pemegang saham, memberikan kesempatan investasi yang berupa peningkatan laba dan kas deviden kas, mengembalikan harga dan ukuran perdagangan rata-rata saham kepada kisaran yang ditargetkan, serat untuk memperoleh *optimal trading range* dan akhirnya dapat meningkatkan daya tarink investor untuk memiliki saham tersebut, jadi saham tersebut akan lebih liquid diperdagangkan dan diharapkan dapat meningkatkan nilai saham dimasa depan. Salah satu alas an bahwa pasar bereaksi terhadap stock split adalah stock split mempunyai kandungan informasi. Pasar modal akan efisien jika harga securitas menunjukkan informasi yang relevan. Reaksi setelah pengumuman stock split adalah dengan berubahnya harga saham dan akan memungkinkan adanya abnormal return.

Penelitian ini menggunakan semua perusahaan yang melakukan stock split pada tahun 1998-2000, dan pada saat melakukan stock split tidak melakukan corporate action yang lain. Tujuan dari penelitian ini adalah untuk mengetahui perbedaan antara abnormal return dan trading volume pada periode sebelum dan sesudah pengumuman stock split. Jangka waktu yang digunakan adalah 5 hari sebelum dan 5 hari sesudah stock split.

Data yang diuji terdistribusi normal dengan sebaran yang relatif sama, sehingga memperkecil penyimpangan sesuai dengan hasil pengujian kolmogorov dimana asymp sign lebih besar dari significant level. Dengan menggunakan parametric t-test dengan $\leq 5\%$ (t-table=2,0369), hasilnya adalah: (1) tidak ada perbedaan yang significant antara abnormal return sebelum dan sesudah stock split, ditunjukkan dengan t-test=0,488 < t-table, membuat Ho diterima. (2) tidak ada perbedaan yang significant antara TVA sebelum dan sesudah stock split, ditunjukkan dengan t-test=0,413 < t-table, membuat Ho diterima.

Dari hasil penelitian, dapat disimpulkan bahwa pasar menyerap informasi karena stock split, jadi rata-rata abnormal return setalah stock split akan kembali seperti semula. Karena itu, perusahaan go public harus mengantisipasi kondisi pasar sebelum stock split, dengan cara mengasosiasikan stock split di pasar sebelum dengan perusahaan-perusahaan yang akan memperoleh kenaikan pendapatan perusahaan yang besar. Hal ini akan mendorong investor mempunyai anggapan yang positif setelah terjadinya stock split.

CHAPTER I

INTRODUCTION

1.1. Research Background

The presence of Capital Market in Indonesia already has motivated the national economic activities. In the condition to fulfill the requirement of a quite big capital, this organization will increase the alternative fund resources.

Basically there are 3 parties concerned with the capital market, i.e. government, company and investor. Firstly, for the government, the capital market is a tool to mobilize the people fund in Indonesia or foreign country. In economic democration, the capital market plays the role to increase the people participation in development and get the development result equally. The capital market will allocate the people's fund to more productive and efficient sector, so that the economic development will be achieved faster. Second, for a go public company, the fund could be used to improve the capital company structure (to avoid the company from the high debt to equity ratio) and to increase the company value. The fund is regarded as cheaper fund, so that the cost of capital market could be pressed to maximize the possibility for expansion. Third, for investor, that the capital market is used as a vehicle to invest the fund, so the capital market can increase the

choice of investment and the utility function of each investor could be optimized.

The capital market in Indonesia has existed since Dutch Colonial Government. Having been stopped on the World War II, it was active again since 1st of September 1951 by the government with temporary regulations number 13, which is regarded as UU No.15, 1952. The stock exchange has traded the share issued before World War II, but this condition lasted only until 1958. In 10 August 1977, the stock exchange had been opened again. After that the Jakarta Stock Exchange has been developing. The development of capital market in Indonesia after 1988 shows the total significant of the development, even the Indonesia capital market has been mentioned as the quickest stock exchange that develop in the world. However, it has never been proved as empirically (Sunariyah.1997).

Factor was influencing the stock demand and supply is the level of stock price. If the price is higher, the demand of stock will be decrease. But if the price of stock is lower, the demand of stock will be increase. Higher price will be decreasing the capability of investor to buying the stock.

The successful of the investor to invest the fund in a long term in capital market is influenced by the investor carefulness to interpret that the cases have an impact on the shares value. Some cases could be anticipated and some not is anticipate. The cases that could be anticipated are for examples are issuing of the announcement of financial degree, such as dividend distribution, right issue, stock split, bonus distribution of share, etc.

The example of the case that could not be anticipated is the incidence of boom blast in Jakarta Stock exchange. The two things mentioned above can be used as information for the investor because those will give the impact to the change of share value.

Stock split remain one of the most popular and least understood phenomena in equity markets. With the bull market of the nineties pushing stock prices to historic levels, stock splits have also soared, reaching a record level of 235 on the NYSE in 1997. The traditional wisdom is that stock split are "good information", that companies split their stocks when they are confident that earnings momentum will continue to push their stock's price upward. The positive stock price reaction accompanying the announcement of a split (e.g. Grinbalt, Masulis, and Titman (1984): Lamoureux and Poon (1987)) gives credence to this optimistic view.

Generally, said that the announcement of stock split can be caused of reaction from capital market to that policy. Stock split is regarded as information and can emerge market reaction. This reaction is not only caused by that stock split but also the other information that impacts stock split. It is not easy for investor to estimate the information because a manager has different motivation in stock split. The manager's motivation to increase the number of shareholder is to give investment opportunity such as increasing the profit and cash dividend, return the value and the average trading share size to the target, and to get optimal trading range. Stock split is aimed to keep the share value not to be too high and to keep that condition

to optimal trading range, and eventually can increase the investor's interest to have that share, so the share could be more liquid for trading and it will hopefully increase the stock value in the future.

One of the efficient characteristics of the capital market has fast reaction after the public knows about the information. One reaction of stock split announcement activities is change in share value and possible to find the abnormal return, in which the level of return is more than normal return. But, if there is no information, the market does not get the abnormal return. Another important aspect on the stock split is signaling function which stock split has. From the study of Klien & Paterson (1989) it is found that the companies that announce the split of their share will get the return more than the company, which not do the split. Klien &Peterson (1989) study supported by Lakonishok & Lev (1987) study concludes that stock split announcement gives information about increasing of company income which at the same time abnormal return will happen because of that information.

One reason of stock split is to make the stock price not too high and the low stock price will increase the trading liquidity. If the trading liquidity increases and many investors are interested with that share, stock split will increase the stock trading volume.

Some arguments admit that split activity is believed as management strategy to keep the stock price in some level and to get fund from investor,

but there has been some opponents from this belief, McGough (1993) summarize reason for proponents as:

1. Lowering the stock price thus it will be more affordable to small-sized, wealth constraints investor.
2. Enhancing stock liquidity, as the result of increasing number of investor demanding the splitting stock.
3. Stockholders may gain some benefit from price volatility, and stock price may go up and down.
4. Positive market reaction can be interpreted as management success to convince the, market about company's future condition.

This study is replication of the study conducted by Setiawan Raharjo (1998). He used abnormal return to tried the theoretical market reaction with even split The research needs 40 weeks, 20 weeks before the time of research, 20 weeks after the time of research and 1 week at the time of stock split. Setiawan Raharjo concludes that the market had reaction with stock split because of abnormal return and there is no significant differentiation of abnormal return between before and after the announcement of stock split.

1.2. Problem Identification

There are various argument talking about stock split previously studied, both at foreign capital market and at Jakarta Stock Exchange are the interesting phenomena to discuss. The researcher therefore will conduct the

research about the influence of stock split toward stock of abnormal return and stock trading volume at Jakarta Stock Exchange.

1.3. Research Constraints

This research analyzes the stock split announced during 1998-2000 in the go public companies registered in Jakarta Stock Exchange. The research takes 10 days to analyze, 5 days before stock split and 5 days after stock split.

1.4. Problem Formulation

Based on the problems stated above, this study formulates the following questions:

1. Is there any difference of stock abnormal return before and after stock split?
2. Is there any difference of stock trading volume before and after stock split?

1.5. Research Objectives

The objectives of this study are:

1. To analyze the differentiated of stock abnormal return before and after the announcement of stock split.
2. To analyze the differentiated of stock trading volume before and after the announcement of stock split

1.6. Research Benefits

The study will hopefully give benefit to the following parties:

1. Researcher, to apply the knowledge or theory that studied when study at with theoretical and practical knowledge.
2. Investor, as a reference that can explain about how the importance of the information about stock split toward stock return for stock invests consideration.
3. Institution, this research can be taken hopefully as a reference for other researcher.
4. Reader, the result of this study can give additional information.

1.7. Definition of Terms

1. **Stock** is a letter of evidence or the sign of ownership in the capital market on the Limited (*Perseroan Terbatas).* In the trade transaction on the stock exchange, the share is an instrument, which is dominant to be traded. There are 2 kinds of stock, common stock and preferred stock.
2. **Stock split** is the split of a sheet of stock to n sheet (Jogiyanto, 2000: 379). The prices of new stock per sheet after stock split are 1/n of the price before. In accounting it is known as a change of a nominal value of a sheet of stock.

3. **Abnormal return** (excess return) is more return that happened with normal returns.
4. **Trading volume** is the number of shares in a stock for a given period, typically for one day. Volumes give some indication of a stock's liquidity and may indicate a special even.

1.8. Operational Definitions

Operational definitions are concepts which is words construction that drawn about a behavior. Operational definition can be explain as:

The variable in this research includes:

1. Dependent variable

   Dependent variable in this research is abnormal return and trading volume activity. Abnormal return and trading volume activity are uses to test the market reaction because of stock split announcement.

2. Independent variable

   Independent variable in this research is stock split. The date of stock split is uses to know the differences of abnormal return and trading volume in period before and after the event split.

1.9. Report Systematic

The thesis will be presented into five chapters as explained bellow:

CH I. Introduction

This chapter consists of research background, problem identification, research constrains, problem formulation, research objectives, research benefits, definition of terms, operational definitions, and report systematic.

CH II. Review and related literature

It is a chapter discussing theoretical concept referred to as the research reference, theoretical review, and theoretical frame and formulating hypothesis.

CH III. Research method

This chapter discusses about research method, research subject, research setting, data collecting technique, data analysis, and hypothesis testing.

CH IV. Research analysis

It is a chapter that discusses various research result and data processing

CH V. Conclusion and recommendation

This chapter discusses conclusion of the analysis result and gives needed suggestions.

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1. Indonesia Capital Market

2.1.1. The Understanding of Capital Market

Definition of capital market in general is a financial system that is organized, which includes Commercial Banking and all mediator of financial sector and also circulate the securities (Kepmen Keuangan RI no. 1548/KM/90, about capital market). Specifically, the definition of Capital Market in specific is a market (place) that prepares to trade the shares, obligation, and other security by using mediator trade service.

2.1.2. Function of Capital Market

Based on Kepres No. 52,1976, Capital market has 2 functions, there are:

1. Accelerating the expansion process that people can participate in having the private stock company, to even distribution the people revenue.
2. Stimulating the people participation in collecting the funds used for national development.

Tanjung (1990) divides capital market function into macro and micro function. Capital market function, as seen from macro function is:

1. As an alternative source for investment and national development done by government and private sector.
2. As a monetary instrument by implementing open market policy.
3. As a way for small capitalist to participate in the government and private sector activities.

Capital Market function, as seen from micro function:

1. To make better condition of capitalist company structure.
2. In certain situation, go public is the way to increase the company value.
3. As a tool to create and show the company capability in development the business working by merger and acquisition.

2.2. Stock

Stock is a letter of evidence or the sign of ownership in the capital market on the Limited Company (*Perseroan Terbatas*). In the trade transaction on the stock exchange, the share is an instrument which is dominant to be traded. There are two types of stock, common stock and preferred stock.

A. Common Stock

a. Dividend is paid as long as the company get the return.

b. One share one vote

c. The right to get company wealth if the company is bankrupt after the company pays its liabilities.

B. Preferred Stock

a. Has right to get dividend.

b. No voice vote.

c. Can influence the company management

d. Possible to get company return beside fixed revenue.

2.3.Theoretical Review

2.3.1. Stock Split

Stock split is a split of 1 stock sheet to n stock sheet (Jogiyanto, 2003:415). The price of new stock per-sheet after stock split is 1/n from the previous price. In accounting it is known as the changes of nominal value per-sheet of share. When the price of shares is too expensive and will decrease the ability of investor to buy, the company will conduct the stock split. Actually, conducting the stock split does not increase the company value and the stock split does not have economic value. For example, if the number of share circulated are 1 million sheets and the value per-sheet is Rp. 1.000,00 the equity value is 1 million x Rp. 1.000,00 = Rp. 1 billion. The company splits its stock from 1 sheet divided by 2 stock sheets, and the new price is Rp. 500,00 and the number of stock sheet become 2 million sheets. However, the company equity value does not change (2 million x Rp. 500,00 = Rp. 1 billion).

There are 2 types of stock split, split up and split down (reverse split),

1. Split up is stock split that make the nominal become smaller appropriate with split factor. For example, stock split with split factor 2:1, 3:1, and 4:1, usually definite with $n_1 : n_0$, in which n_1 is the number of stock sheet after stock split. And n_0 is the number of stock sheet before stock split. If the split is 2:1 (two-for-one split) it means 1 stock sheet was split to be half of the beginning value.
2. Reverse split is stock split that make the nominal become bigger. For example, reverse split 1:2, 1:3, and 1:4, like split up, the split down written as $n_1 : n_0$. 1:2 split; which means 2 stock sheets change to be 1 sheet. The nominal value to be doubled and the number of all stock is half of the beginning stock.

There are many reasons why the company run the stock split. According to Yosef and Brown (1977), there are 5 reasons: (1) increasing the marketing of company stock, (2) extending the information related with big investment opportunity, (3) refusing merger for the stockholder, (4) increasing the product selling, (5) increasing the relationship between both the owners and the company staff.

Even though stock split just a "cosmetics" change but research shows that split will increase stock demand from small-sized investor, this demand will increase stock liquidity and generate higher price. But this premise not permanent. Lamoreux & Poon (1987) find that trading liquidity

decreases after a stock split. Mean while, according to Mc Nichols & Dravid (1990), the reason of company doing stock split is to move the stock price to optimal trading range.

Stock split remain one of the most popular and least understood phenomena in equity markets. With the bull market of the nineties pushing stock prices to historic levels, stock splits have also soared, reaching a record level of 235 on the NYSE in 1997. The traditional wisdom is that stock split are "good information", that companies split their stocks when they are confident that earnings momentum will continue to push their stock's price upward. The positive stock price reaction accompanying the announcement of a split (e.g. Grinbalt, Masulis, and Titman (1984): Lamoureux and Poon (1987)) gives credence to this optimistic view. Yet, why a split per se is necessary is unclear since there is no bound limiting a stock's price level, and alternative signaling devices (such as dividend increase) are used extensively moreover, empirical research has documented a wide range of negative effects such as increased volatility, large proportional spreads, and greater transaction costs following splits.

2.3.1.1. Market Reaction of Stock Split

If a company declares a corporate action, it must have some direct or indirect effects in their traded stock price and this happened when a company intend to split its stock, as the market sees it as information.

For investor, before they decide to buy and sell their stock, they need information used to make decision related with profitable investment portfolio choice with the certain level risk. In the capital, investor should get much information, even though the information of stock split given by the company does not have economic value, at the market, stock split still give an impact:

a. Increasing the stockholder's profit

b. Increasing the stock liquidity that had split

c. Increasing the stock risk that had split

In study published in the Harvard Business Review in 1956, C.A. Baker pointed the direction for the most current scholarship on the stock split question; in which Baker argued that " it is illogically for split-up to affect price, because the split is simply cutting a loaf of bread in half". Baker's study is the first to attempt to separate the real effect of stock split from the effects of concurrent increases of the dividend. He did so by dividing into two groups of a sample of 90 companies that split their stock between 51 and 53. Those companies whose split were accompanied by dividend increase had abnormally high price appreciation, while the other companies which did not raise their dividend, failed to outperform the market. From these findings, Baker correctly concludes that dividend increase is a more fundamental cause of the price increase attributed to stock split.

Fama at. al. hypothesis was denied by Grinbalt, Masulis & Hitman's study (1984), where they found that the positive stock price reaction accompanying the split announcement also happened to the companies which do not do the split action. This finding is supported by the fact that only 11% of their samples accompany the split action with dividend announcement. They obtain a sample of "pure" split which is a split that is not contaminated by any other announcement over a period of a few days. They use the sample to see the magnitudes of the average price reaction to stock split and stock dividend. As a result, they found that giving the cost associated with stock split and stock dividend, if the managers posses unfavorable information about the future growth they may decide against increasing the number (split), event if the perceived stock price to be "too high" because they anticipate that, when the split information is disclosed, stock price will revert to norm way.

Theoretically, company motivation in doing stock split and the effect of stock split is poured out in hypothesis, including signaling and liquidity hypothesis (Baker & Powel, 1993).

Signaling Hypothesis is known as asymmetry information hypothesis explaining that event split is giving informative signaling to investor about company prospect in the future. Liquidity hypothesis explains about company manager's intention in increasing the trading liquidity. This explanation is supported by the idea that the company doing stock split will increase the investor interest, because of the lower stock price. This

condition makes the increasing number of stock that was traded increase the number of stockholders (Lamoreoux & Poon, 1987)

On the level of information for both manager and investor, the manager will decide to do stock split and the investor will get the information. Brennan & Copelland (1998), said that split activities give the costly signal toward manager information, because trading cost depends on the stock price, in which both variable have negative relationship. As stated by Brennan & Hughes (1991) and Mc Nichols & Dravid (1990), the highest level of stock commission and the lowest level of stock price make increasing in the cost company paid because of stock split.

Copelland (1979) and Demseltz (1977) measured that the market reaction of stock split is based on stock liquidity. Bar & Brown (1977) and Fama et.al (1992) measured the market reaction of stock split by seeing the changes of stock beta. They analyze the changes of stock beta at the time of the event split. Conroy, Harris, & Benet (1990) measured the market reaction of stock split based on stock liquidity was measured with bid-ask spread.

The ways to calculate market reaction are:

a). Calculating Abnormal Return

It measure the market reaction by using abnormal return variable Setiawan Raharjo, (1998) explains that the market has positive reaction at the time of stock spli, which is formulated as:

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

in which,

$AR_{i,t}$: stock abnormal return on t period of company i

$R_{i,t}$: stock return on t period of company i

$E(R_{i,t})$: stock expected return on t period of company

b). Cumulative Abnormal Return

George Foster (1997), states that CAR variable explains that the financial reporting of market reaction is the total abnormal return on several period. The formula is:

$$CAAR_t = \sum \frac{AR_{it}}{N}$$

in which,

$CAAR_t$: CAR average

N : the number of sample

c). Security Return Variability

SRV used to know the possible or impossible announcement to change of stock return distribution.

$$SRV = \frac{U^2it}{V(U_{it})}$$

in which,

$V^2_{i,t}$: stock abnormal return benefit

$V(u_{i,t})$: benefit level variance

d). Buy and Hold

Ou & Penman (1992) use this variable to calculate the market reaction, which is formulated as:

$$BHR = \frac{1}{n}\sum \Pi(1 + AR_{it})$$

e). Trading Volume Activity

Trading Volume Activities is used to see the influence of stock split toward stock liquidity. Trading Volume Activities is formulated as:

$$TVA_{it} = \frac{\text{The number of stock of company i was traded on day t}}{\text{The number of stock of company i out standing on day t}}$$

2.3.1.2. Single Index Model

Single index model concept based on the level of company's profit was influencing by the level of market profit. Single index model can be reduce the number of variable, because not need to estimate the correlation coefficient was uses to calculate the standard deviation. Beside of that, beta is stable variable. Beta histories uses to estimate the future beta (β).

If the condition of market is good (bullish) that showing by market index (in BEJ is *IHSG*), the individual stock price will be increase. But, if the condition of market is worst (bearish), the individual stock price will be decrease. This reality showing that that level of stock profit has been correlation with the market change (the level of market index). Single index model formulation (Jogiyanto, 2003) are:

$$Ri = ai + \beta i\ Rm$$

where,

Ri : individual stock return.

ai : part of stock level company i that was not influencing by market changes.

βi : parameter to measure the changes that was hope in Ri if there is change of Rm.

Rm : market index profit level

Using Single Index Model for security will making the profit level, the standard deviation and stock covariance are:

1. The profit level

$$E(Ri) = \alpha + \beta\ E(Rm)$$

2. The profit level variance

$$\delta i^2 = \beta i^2\ \delta m^2 + \delta ei^2$$

3. The profit level varience (I and j)

$$\delta ij = \beta i\ \beta j\ \delta m^2$$

This model shows that the profit level has 2 components, there are: unique part (αi) and the part that relate with market (β E (Rm)). The profit level variance has unique part (δei^2) and the risk that relate with market ($\beta i^2\ \delta m^2$). But, the covariance is depend on market risk, it means, the Single Index Model is showing why the stocks was move together with market reaction.

2.3.2. Stock Return and Abnormal Return

There are 2 ways to get stock return level First, return level is obtained from the differences between selling price and buying price The return which really happens is called realize return. Realize return is important used to measure the company performance based on historical data. History return is needed to determine expectation return and future risk. Second is stock return level which is obtained from stock investment. The stock return level which is expected is called expected return.

One measurement of realizes return used is total return. Total return is all return from investment at a period, and it could be in the form of capital gain (loss) and yield.

Capital gain is a profit gained from the slack between the current stock price and the relative price of previous period.

$$\text{Capital Gain (loss)} = \frac{P_t - P_{t-1}}{P_{t-1}}$$

in which,

P_t : the stock price at t time

P_{t-1} : the stock price in a previous period

If the current stock price (P_t) is higher than investment price in the previous period (P_t), it means that there is a capital gain, if the fact takes a different side, there must be a capital loss.

Yield is a periodic cash revenue percentage over the stock price in certain period from a stock investment or in other words, Yield is a dividend percentage over the stock price in a previous period.

$$\text{Yield} = \frac{D_t}{P_{t-1}}$$

in which,

D_t : the given dividend within t (t-1) period

P_{t-1}: the stock price in a previous period

Abnormal return (excess return) is surplus of the real return, happening in normal return. Normal return is expectation return (investor hope for this return). The abnormal return is the difference between real return and expectation return. Real return is return which happens on t period that is a different of present price and the previous price.

2.3.3. Stock Trading Volume

Stock trading volume is the number of shares in a stock for a given period, typically for one day. When trading is lighter than usual, it is said to be "thin", when there is more trading than usual, it is called "heavy trading". Volume is the basic fuel of the market since stock move up and down in the price only when shares are trading hands.

Volume gives some indication of a stock's liquidity (higher volume it is the more buyers and sellers out there). Volume may indicate a special event. Most stocks trade at an even pace for days or week at a stretch (often

until something unusual occurs). Heavy volume may indicate that the company has released important news. The news might be earnings announcement, a new product, and a change at the executive level, an acquisition, a merger, or a new corporate alliance.

The changes of stock trading volume in capital market show the stock trading activity and the investor investment decision (Yudianala, 1994).

Measuring the stock trading volume is seeing the indicator of stock trading activity. Husnanet. Al. (1995) and Hastuti (1977) state that every single sample is calculated using the relative trading volume ratio, and then it is calculated using the average of relative trading activity.

The accounting information is important. The financial reporting is used to make investment decision. Beaver (1968) is research shows that the average of stock trading volume activity increases after the announcement of financial reporting.

2.4. Theoretical Frame and Formulating Hypothesis

The theoretical frame is made to ease or to find out the relation between the dependent and independent variables. The dependent variables in this research are abnormal return and stock trading volume, while the independent variable is stock split. The explanation and the framework relate between abnormal return and stocks trading volume to stock split.

2.4.1. The Relationship Between Abnormal Return and Stock Split

The objective of stock split is to make investor interested to buy the stock. The announcement of stock split could increase or decrease the price. Market reaction is measured either by using return as a value changes of stock price or by using abnormal return. The announcement provides abnormal return at the market with information contents. however, if there is no information content, it will not provide market with abnormal return

The announcement of stock split is the information needed by investor to know the stock price on the optimal trading range. The capability of small investor in buying the stock can increased. If the announcement contains an information, hopefully the market will give reaction toward the announcement. In this case usually market reaction is shown by the changes of security price. This reaction is measured either by using return as price value changes or by using abnormal return. If the announcement contain information, it will give abnormal return. Nevertheless, if there is no information provided, it will not give abnormal return to the market.

Keith B. Johnson (1966) conducts research about the relationship between stocks split change by controlling the influence of earning, dividend and trend or market behavior. The conclusion is the changes of stock price is found related to stock split.

Brennan & Hughes (1991) assumes that investors will invest if they really know about the stock and it will be traded by broker that analyzing the company. Split activity was done by a company will be interpreted by

investor as a signal. Manager has benefit information to show positive abnormal return when announcing stock split. This model predicts that information giving analyzes will increase the stock price volatility, bigger spread eventually and increase the number of stockholders.

Fama, Fisher, Jensen, & Roll (1969) conduct research about stock split, which analyzes 940 stock splits happened from January 1927 to December 1959. They were measure cumulative abnormal return from month –30 until month +30. They have found abnormal return for 30 months before stock split, but there is no abnormal return after stock split. The abnormal return has been found since 30th month before stock split because investor has anticipated the stock split since 30 months before stock split. Positive abnormal return obtained only by the company that has good performance.

Based on theoretical description and framework and the result of relevant studies stated above, it can be formulated as follows:

Ho : There is no significant difference of stock abnormal return on period before and after the stock split.

Ha : There are some significant differences of stock abnormal return on period before and after stock split.

2.4.2. The Relationship Between Stock Trading Volume and Stock Split

The trading range hypothesis (Copeland, 1979) argues that firms prefer to keep their stock price within a particular (lower) price range. This preference may be because of a specific clientele they wish to attract or a particular dispersion in ownership they wish to achieve, but in either case it reflects the view that greater liquidity for stocks may arise in certain price ranges than in others. The clientele preferring a lower price range is usually thought to be uninformed or small investors.

Different reasons have been put forward but none has received substantial support. One explanation is that small investors are good for market stability (Baker, 1956: Stovall, 1996). Overwhelming evidence that return volatility increases after splits. Other explanation is that a self-serving management wants diffused ownership since small investors cannot exercise too much control (Powell & Baker, 1993/1994). Empirical research finds clear evidence, however, that institutional ownership increases, rather than decreases, after splits (Maloney & Mulherin, 1992: Powell & Baker, 1993/1994).

After the stock split, the number of stockholders will increase because there is more individual stockholder increase. If the number of stockholders increase after stock split, the trading volume will increase. The company objective to do the stock split is making the price not too expensive, which therefore will increase the trading liquidity.

Enlarged clientele provides better liquidity and thereby reduces the cost of trading and investing in the stock. Evidence on this explanation seems to be mixed. For example, while some papers that use volume to proxy for liquidity find that it decreases after split, others report that it does not change. Another proxy liquidity, the number of trades, was found to suggesting worsened liquidity.

Thomas E. Copelland (1997) analyzes the relationship between stock split and the changes of stock liquidity using Finite Time Series Model to research individual stock trading volume. His research concludes that stocks trading volume is decreased after stock split, which results in decrease in liquidity. The reason may be caused by the higher broker cost and bid-ask spreads after stock split.

According to Weston & Copelland, stock split does not have economic value. However emitten company still do stock split that may be based on 2 reasons:

a. Related to security price liquidity

It means, usually a company splits its stock in order to make the stock price is not too expensive. If the price is not too expensive, the trading liquidity will be increased, because there are a lot of investor interested to buy the stock and eventually stock trading volume will be increased.

b. Related to the signal that company will announce to public

The announcement of stock split is a positive signal since company manager intends to show a better prospect of the company in the future.

This signal supported by the fact that the company which does stock split is the company that has a good condition.

Ma'ruffin (1998) analyzes stock split effect on trading volume activity toward some listed companies in Jakarta Stock Exchange. Ma'ruffin takes the stock splitting companies from July 1996 to June 1997. The study concludes that there is significant difference in the average Trading Volume Activities around the execution date and around the announcement date.

Based on the theoretical description and framework and the result of relevant studies stated above, it can be formulated as hypothesis as follows:

Ho : There is no significant difference of average Trading Volume Activity on period before and after the stock split.

Ha : There some significant differences of average Trading Volume Activity on period before and after stock split.

CHAPTER III

RESEARCH METHOD

3.1. Research Method

The type of study method used in this research is event study. Event study is a study about market reaction to an in which that the information is regarded as an announcement. Event study is used to try the information content of an announcement. (Jogiyanto, 2000:392). Event study is an observation of price movement in a stock market to see whether there is an abnormal return received by investor as the result of certain even (Peterson, 1989).

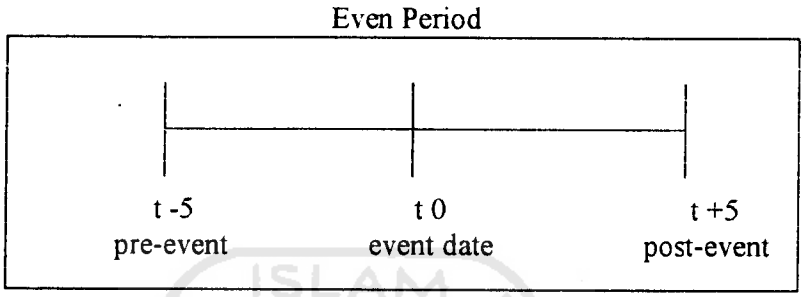
From that definition it can be seen the market reaction toward an event. The objects in this research are go public companies that registered at Jakarta Stock Exchange and doing the stock spit.

3.2. Research Subjects

The population of this research is stocks of go public companies listed at Jakarta stock Exchange. Technique sampling of this research is purposive sampling. It means the population fulfills the certain sample criteria. The researcher selects sample from the companies that are active in their stock trading at Jakarta Stock Exchange. The periods of this research

are approximately 5 days in the time stock split, 5 days before stock split and 5 days after stock split. The event period in this research can be drawn as follow:

Figure 3.1



Selecting the sample criteria is needed to avoid misspecification. The criteria used in the research are:

1. All companies' shares that split their stock in period from 1998-2000.
2. The research period is not the same as other events that can influence the changes of stock price directly, for example: right, stock dividend, bonus stock, warrant, and financial report.
3. Company stock is actively traded at the time on research period.
4. Sample companies are from several sectors, which are non-financial sector, miscellaneous sector, consumergoods industry sector, property and real estate sector, trade, service and investment sector, infrastructure, utilities and transportation sector.

In period of 1998-2000, there are 65 companies that do the stock split. 33 companies are used for sample, and the other 32 companies are not used as sample in this research. The 32 companies consist of 3 companies

having 2 times of stock split in period 1998-2000, the researcher takes only 1 latest of stock split. The other companies are from financial sector, which has different characteristics with other sector (stock dividend, type of industry, the size of company).

Watt and Zimmerman (1986:361) say that the company working in financial area may have similar problems, like incentive, contract system and accounting procedures. The 10 companies are not used as sample because, after collecting the price data, the 10 companies have constant stock price value. This problem results in zero stock return, and therefore could not be used in the analysis and hypothesis testing.

From the 33 companies taken as sample in this research, 12 companies working in industry and chemical sector are mostly doing the stock split. The others are 7 companies working in trade, service and investment sector, 5 companies working in consumergoods industry, 4 companies working in various industry sectors, 2 companies working in property and real estate sector and the other 2 companies working in infrastructure sector.

The data of the companies doing stock split is shown in appendix 1 and 2. Distribution sample of each sector is explained on table 3.1.

Table 3.1

Distribution Company sample of each Company

No.	Sector	The # of company
1	Mining Sector	1
2	Basic Industry & Chemicals Sector	12
3	Miscellaneous Industry Sector	4
4	Property & Real Estate Sector	2
5	Consumergoods Industry Sector	5
6	Infrastructure Sector	2
7	Trade, Service & Investment Sector	7
	Total	33

Using 33 companies as the sample is appropriate with what Gay & Diehl (Sigit;1999:63) state that the minimum subjects for comparative causal research are 30 subjects.

3.3. Research Setting

This research is conducted on the companies listed in the Jakarta Stock Exchange, while the data is taken in Jakarta Stock Exchange FE UII Corner, Condong Catur, Depok, Sleman, Yogyakarta.

3.4. Data Collecting Technique

This research uses secondary data obtained from JSX (capital market references center), research studies, books, magazine and other references. The data are collected from *Bisnis Indonesia* daily newspaper, JSX monthly and Indonesia Capital Market Directory. The data of the date of stock split is developed from Jakarta Stock Exchange

Data required for this research are:

1. Company list doing stock split in period 1998-2000, taken Indonesia Capital Market Directory and JSX statistics.
2. The date of the announcement of stock split taken Indonesia Capital Market Directory and Jakarta Stock Exchange statistics. The weekly stock price and IHSG (*Indeks Harga Saham Gabungan*) are taken from *Bisnis Indonesia* daily newspaper and Jakarta Stock Exchange monthly statistics.

3.5. Data Analysis

3.5.1. Qualitative Analysis

This analysis technique uses verbal language based on research data. Qualitative analysis tool is interpretation resulted from data analysis result. Qualitative analysis explains and interprets calculating result of stock abnormal return and result from calculating stack-trading activity before and after stock split.

3.5.2. Quantitative Analysis

This technique is used to analyze the problem and is then explained on quantity model and it's number as interpretation from analyzing the result. Analyzing the problem that is shaped in quantity does quantitative analysis in this research. Quantitative analysis is obtained from as follows:

3.5.2.1. Calculating Abnormal Return

1). Calculating Stock Return

To calculate daily stock return, each share is calculated for 5 days by the time of stock split. Mathematically is could be calculated as follow:

a). $R_i = \frac{p_t - p_{t-1}}{p_{t-1}}$

where,

R_i : Individual stock return

P_t : closing stock price in day t

P_{t-1} : stock price in day t-1

b). Calculating Average return off all sample for each day, from day –5 to day +5.

$$\overline{R_t} = \frac{\sum_{i=1}^{n} R_{it}}{N}$$

where,

Rt : Average return on day t

N : the number of sample

2). Calculating Market return

Calculating daily market return uses IHSG for period 5 days at the time of stock split. Calculating return market could be formulated:

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

where,

Rm : market return

$IHSG_t$: closing price of *Indeks Harga Saham Gabungan* in t period

$IHSG_{t-1}$: *Indeks Harga Saham Gabungan* in t period

3). Calculating Expected Return

This research uses single index model to calculate stock expected return. The expected return can be calculated as follow:

a). Alfa and beta is obtained by using simple linear regress. The data used in this regression is all information estimation period, which is from t-5 to t+5, and the formula is:

$R_{it} = \alpha i + \beta i \,.\, Rmt$

where,

R_{it} : stock return company i on day t

αi : the level of return free from risk on company i

βi : stock systematic risk/market risk

R_{mt} : market return on day t

b). After knowing α and β, the expected return can be calculated:

$E(Ri,t) = \alpha i + \beta i \,.\, Rmt$

where,

$E(R_{i,t})$: stock expected return company i on day t period

αi : the level of stock return company i free from risk

βi : stock systematic risk or market risk

R_{mt} : market return on day t

4). Calculating the Abnormal Return

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

where,

$AR_{i,t}$: Stock abnormal return company i on day t

$R_{i,t}$: stock return company i on day t

$E(R_{i,t})$: stock expected return company i on day t

5). Calculating the Average Abnormal Return

$$AAR_t = \sum \frac{AR_{it}}{N}$$

where,

AAR_t : stock average abnormal return

N : the number of sample

3.5.2.2. Calculating Stock Trading Volume

To calculate stock trading volume is to see the indicator of trading volume activity. The following steps are:

1). Calculating the Trading Volume Activities of stock of company i traded in time t

$$TVA_{it} = \frac{\sum \text{number of stock of company i traded in time t}}{\sum \text{number of stock of company i outstanding in time t}}$$

2). Calculating the average Trading Volume Activities of all samples before and after the event in date t

$$\overline{TVA_{N,t}} = \sum_{J=1}^{N} \frac{TVA_{i,t}}{N}$$

where,

$\overline{TVA_{N,t}}$ = Average TVA of shares in day t

$TVA_{i,t}$ = TVA of company I traded in time t

N = Number of days of sample

3). Calculating the average Trading volume activities of all sample before and after the event for company X, which is formulated as:

$$TVA_{\text{before}} = \sum_{t=-5}^{t=-1} \frac{TVA_{t\,\text{before}}}{5}$$

$$TVA_{\text{after}} = \sum_{t=+1}^{t=+5} \frac{TVA_{t\,\text{after}}}{5}$$

where:

TVA_{before} : Average TVA of stock before the announcement date

TVA_{after} : Average TVA of stock after the announcement date

$TVA_{t\,before}$: TVA of stock before split in time t

$TVA_{t\,after}$: TVA of stock after split time t

3.6. Hypothesis Testing

Statistics test used on this research is t-test, used if the population deviation standard is known. This research is using mean value, since mean samples is the best gauge of mean populations. The objective of t-test to knowing the differences of 2 samples, cause by coincidental factor or other factor.

The t-test used in this research is to pairs and a parts sample with significant level is α = 5%. This technique is chosen because this research uses same sample with pair's data (not independent) in different condition.

3.6.1. Abnormal Return Hypothesis testing

To obtain the Abnormal Return Hypothesis steps are as follow:

1. Determining hypothesis formulation.
2. Determining the average abnormal return.
3. Choosing the testing statistics tool appropriate with testing the different of average pairs data and first variable. First variable is the average of

abnormal return before events split. The second variable is the average of abnormal return after events split.

4. Determining significant level, this research uses $\alpha = 5\%$.
5. Determining df = n-1.
6. Determining distribution test, that is t-test. The value of t is known by using this formula:

$$t = \frac{d}{Sd/\sqrt{n}}$$

where,

t : the price of statistics test

d : the average of d price

Sd : standard deviation of d price

n : the number of pairs

Sd is standard deviation differences of 2 averages from pair data and d is the differences before and after even split. The formula is:

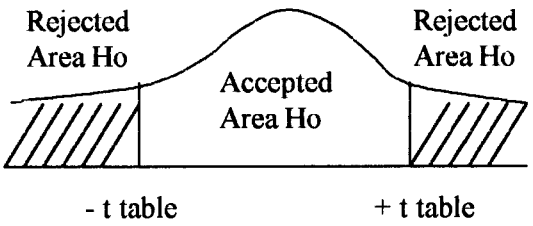
$$Sd = \frac{\sqrt{\left(\Sigma d^2 - nd^2\right)}}{n-1}$$

7. Determining critical value.
8. Decision making

Decisions making is based on t value. If t calculate is smaller than t table, it mean Ho is accepted and Ha is rejected. It can be said, there is no difference of abnormal return before and after stock split. If t calculate is bigger that t table, it means Ho is rejected and Ha is

accepted. It means there are some differences of abnormal return before and after stock split. Could be explained:

Figure 3.2



It can be explained as:

- Rejected Ho, accepted Ha, if t calculation > t table
- Accepted Ho, rejected Ha, if t calculation ≤ t table
- Rejected Ho, accepted Ha, if t calculation ≤ -t table

9. Making conclusion

If hypothesis is accepted, it means the change of abnormal return is cause by stock split. On other contrary, if hypothesis is rejected; it means there is no change of abnormal return due to stock split. The researcher makes use of SPSS analysis to analyze the requirement testing and correlation analysis as well as regression.

3.6.2. Stock Trading Volume Hypothesis Testing

Stock Trading Volume Hypothesis Testing is obtained by following the steps:

1. Determining hypothesis formulation.
2. Determining the average abnormal return.
3. Choose the testing statistics that appropriate with testing the different of average pairs data and first variable. First variable is the average of stock trading activities before events split. The second variable is the average of stock trading activities after events split.
4. Determining significant level, this research uses α = 5%.
5. Determining df = n-1.
6. Determining distribution test. That is t-test. The value of t is known by used this formula:

$$t = \frac{\overline{TVA}_{after} - \overline{TVA}_{before}}{Sd\,TVA_{after}^{2} / na + Sd\,TVA_{before}^{2} / nb}$$

where,

t : t test

na : Sum of day before the event

nb : Sum of day after the event

Sd is standard deviation differences of 2 averages from pair data. The formula is:

$$Sd_{before} = \sqrt{\frac{\sum_{t=15}^{t=-1} (TVA_{before} - \overline{TVA}_{bafore})^2}{n-1}}$$

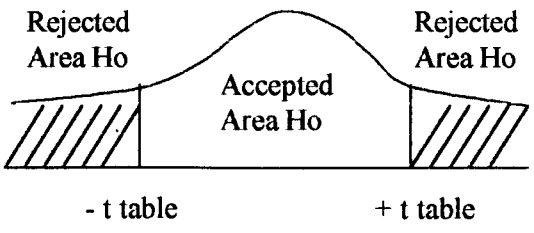
$$Sd_{after} = \sqrt{\frac{\sum_{t=+1}^{t=+5} TVA_{after} - \overline{TVA}_{after})^2}{n-1}}$$

Where, n : number of sample

7. Determining critical value

9. Decisions making is based on t value. If t calculate is smaller than t table, it mean Ho is accepted and Ha is rejected which means there is no difference of stock trading volume before and after stock split. If t calculate is bigger that t table, it mean Ho is rejected and Ha is accepted. It means there is some of stock trading volume before and after stock split. Could be explained:

Figure 3.3



It can be explained as:

- Rejected Ho if t-test < (-t(α/2)) or t-test > (t(α/2))
- Accepted Ho if –t(α/2) < t(α/2)

9. Making conclusion

If hypothesis is accepted, it means the change of trading volume is cause by stock split. On other contrary, if hypothesis is rejected; it means there is no change of trading volume activity due to stock split. The researcher makes use of SPSS analysis to analyze the requirement testing and correlation analysis as well as regression.

CHAPTER IV

RESEARCH ANALYSIS

4.1. Data Analysis

The analysis of this research presents explanation about how calculating individual stock return, market return, stock beta, abnormal return and average abnormal return, trading volume activities and average TVA in sample company. The discussion uses one sample of companies to calculate. The calculating result of individual stock return, market return, stock beta, abnormal return and average abnormal return can be seen on the appendix 5, 6, 7 and 8. The steps to proceeds data are described as:

4.1.1. Calculating Abnormal Return

1). The company used is Darmala Intiland, Tbk (DILD) that did stock split in January 26, 1998. The formula of stock return has been explained in chapter 3, while the calculating is:

$$Ri\,(-5) = \frac{1200 - 950}{950} = 0.2632 \qquad Ri\,(+1) = \frac{500 - 500}{500} = 0.0000$$

$$Ri\,(-4) = \frac{1200 - 1200}{1200} = 0.0000 \qquad Ri\,(+2) = \frac{500 - 500}{500} = 0.0000$$

$$Ri\,(-3) = \frac{1000 - 1200}{1200} = -0.1667 \qquad Ri\,(+3) = \frac{500 - 500}{500} = 0.0000$$

$$Ri\ (-2) = \frac{1000 - 1000}{1000} = 0.0000 \qquad Ri\ (+4) = \frac{650 - 650}{650} = 0.0000$$

$$Ri\ (-1) = \frac{1000 - 1000}{1000} = 0.0000 \qquad Ri\ (+5) = \frac{650 - 650}{650} = 0.0000$$

$$Ri\ (0) = \frac{500 - 1000}{1000} = -0.5000$$

2). Calculating market return

$$Rm\ (-5) = \frac{448.04 - 439.03}{439.03} = 0.0205 \qquad Rm\ (+1) = \frac{485.94 - 554.11}{554.11} = -0.1230$$

$$Rm\ (-4) = \frac{466.00 - 448.04}{448.04} = 0.0401 \qquad Rm\ (+2) = \frac{554.11 - 485.94}{485.94} = 0.1403$$

$$Rm\ (-3) = \frac{443.53 - 466.00}{466.00} = -0.0482 \qquad Rm\ (+3) = \frac{536.79 - 554.11}{554.11} = -0.0313$$

$$Rm\ (-2) = \frac{450.98 - 443.53}{443.53} = 0.0168 \qquad Rm\ (+4) = \frac{519.93 - 513.49}{513.49} = 0.0125$$

$$Rm\ (-1) = \frac{473.69 - 450.98}{450.98} = 0.0503 \qquad Rm\ (+5) = \frac{513.49 - 519.93}{519.93} = -0.0124$$

$$Rm\ (0) = \frac{476.31 - 473.69}{473.69} = 0.0055$$

3). Looking for Alfa and beta using SPSS (Statistical Package For Social Science) program, and obtain:

$Ri = \alpha + \beta Rm$

Using SPSS 11.00, the regression equation is

Ri = -0,011 + 0,106 Rm.

The value of α = -0.011 and β = 0.106

α is expectation value from security return that is independent to market return. α is related to micro event that influence only several companies but does not influence all companies in general. β is return sensitivity of security from market return. The change of market return is about 1%, which it will make the change of return from security about β%.

4). After knowing beta, the stock expected return can be calculated. The regression result is shown on the appendix 7.

Calculating sample: on day 0

E(Ri) = -0.011 + 0.106 Rm

E(Ri) = -0.011 + 0.106 (0.0055)

= -0.0105

5). After calculating expected return, the daily abnormal return of Darmala Intiland, Tbk become:

AR (t-5)	=	0.2632	- -0.0089	AR (t+1)	=	0.0000	- -0.0089
	=	0.2720			=	0.0089	
AR (t-4)	=	0.0000	- -0.0068	AR (t+2)	=	0.0000	- 0.0039
	=	0.0068			=	-0.0039	
AR (t-3)	=	-0.1667	- -0.0162	AR (t+3)	=	0.0000	- -0.0144
	=	-0.1505			=	0.0144	
AR (t-2)	=	0.0000	- -0.0093	AR (t+4)	=	0.3000	- -0.0144
	=	0.0093			=	0.3144	
AR (t-1)	=	0.0000	- -0.0057	AR (t+5)	=	0.0000	- -0.0124
	=	0.0057			=	0.0124	
AR (t0)	=	-0.5000	- -0.0105				
	=	-0.4895					

6) Calculating the average abnormal return on period before, at the time and after the announcement of stock split. The calculating result of each company is shown on the appendix 8.

Calculating sample:

AARt bfr stock split ={-0,2720 + 0,0068 + (-0,1505) + 0093 + 0,0057}/ 5

= 0,02866

AARt aftr stock split ={-0089+0,0039+(-0,0144)+(-0,0144)+ (-0,0134)}/ 5

= 0,06924

4.1.2. Calculating Trading Volume Activities (TVA)

1). The company used is Darmala Intiland, Tbk (DILD) that did stock split in January 26, 1998. The TVA formulation used is the comparison between trading volumes and the number of outstanding share that has been explained on chapter 3. The calculations are:

$$Ri(-5) = \frac{1200}{243627000} = 0.000005 \qquad Ri(+1) = \frac{0}{925782600} = 0.000000$$

$$Ri(-4) = \frac{1100}{243627000} = 0.000005 \qquad Ri(+2) = \frac{0}{925782600} = 0.000000$$

$$Ri(-3) = \frac{0}{243627000} = 0.000000 \qquad Ri(+3) = \frac{650}{925782600} = 0.000001$$

$$Ri(-2) = \frac{0}{243627000} = 0.000000 \qquad Ri(+4) = \frac{650}{925782600} = 0.000001$$

$$Ri(-1) = \frac{0}{243627000} = 0.000000 \qquad Ri(+5) = \frac{700}{925782600} = 0.000001$$

$$Ri(0) = \frac{0}{925782600} = 0.000000$$

2). Calculating average TVA on period before, at the time and after the announcement of stock split. The calculating result for each company can be seen on the appendix 9.

Calculating sample:

TVAt before stock split = {0,000005 + 0,000005 + 0+ 0 + 0}/ 5

= 0,0000019

AARt after stock split = {0+0+0,000001+0,000001+0,000001}/ 5

= 0,0000004

From both steps of calculating abnormal return and TVA on Darmala Intiland, Tbk, can be summarized to one table

Table 4.1

Calculating Abnormal Return and TVA

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	Outstanding Share	TVA
-5	0.263158	0.020524	-0.011	0.106	-0.0089	0.2720	1200	243627000	4.92556E-06
-4	0	0.040096			-0.0068	0.0068	1100	243627000	4.5151E-06
-3	-0.16667	-0.04823			-0.0162	-0.1505		243627000	0
-2	0	0.016808			-0.0093	0.0093		243627000	0
-1	0	0.050338			-0.0057	0.0057		243627000	0
0	-0.5	0.005542			-0.0105	-0.4895		925782600	0
1	0	0.02021			-0.0089	0.0089		925782600	0
2	0	0.140285			0.0039	-0.0039		925782600	0
3	0	-0.03125			-0.0144	0.0144	650	925782600	7.02109E-07
4	0.3	-0.03141			-0.0144	0.3144	650	925782600	7.02109E-07
5	0	-0.01239			-0.0124	0.0124	700	925782600	7.56117E-07

Source: appendix 7

4.2. Hypothesis Testing

4.2.1. First Hypothesis Testing (Stock Abnormal Return)

4.2.1.1. Hypothesis Formulation

Ho : There is no significant difference of stock abnormal return on period before and after the stock split.

Ha : There are some significant differences of stock abnormal return on period before and after stock split.

4.2.1.2. Hypothesis Testing Process

To test whether the announcement of stock split has information that was influencing abnormal return behavior in all around the announcement date, Single Index Model technique is used. To test whether there is information in all around the announcement date t-test is used based on zero hypotheses telling that the abnormal return is zero. The average abnormal return in all around the announcement date can be seen on table 4.2.

Table 4.2

Average Abnormal Return

In All Around Stock Split Date

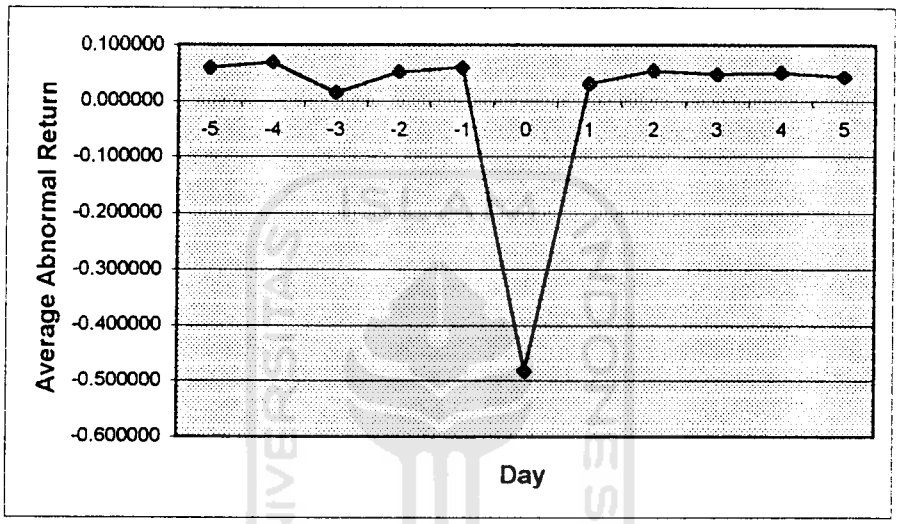
Day	N	Average Abnormal Return	t test	Probability
-5	33	0.060079	4.589	0.000
-4	33	0.069041	5.616	0.000
-3	33	0.014699	1.078	0.289
-2	33	0.051784	3.239	0.003
-1	33	0.059578	2.410	0.022
0	33	-0.482195	-12.734	0.000
1	33	0.031356	1.884	0.069
2	33	0.054283	4.239	0.000
3	33	0.047940	3.313	0.002
4	33	0.050552	2.711	0.011
5	33	0.042884	3.231	0.003

Source: Data Analysis

The result of average stock abnormal return, which is shown in table 4.2 above, can be drawn as a graphic shown in figure 4.1.

Figure 4.1

Average Abnormal Return Graphic



Based on table 4.2 and graphic 4.1 it can be concluded that the value of the average abnormal return at the time of event period is different. The average abnormal return shows the market reaction on company sample. t-test result shows that the several significant average abnormal returns are on 5% level, except on day t-3 and t+1, since probability value is more than 0.05. Therefore all things have significant market reaction in all around stock split announcement date. Average positive value shows positive market reaction, and negative value shows negative reactions. Especially on t0, the average abnormal return is –0,482195, which can be seen on graphic

4.1. The graphic decreases on t0 period. These happen because the stock price was decreased at the time stock split.

The differences of average abnormal return between periods before and after stock spilt, can be seen on table 4.3

Table 4.3

Statistic Result of Average Abnormal Return
In Period Before and After Stock Split

Explanation	t-test	Probability	Mean
On period before to period after announcement of stock split	0,488	0,629	0,00563

Source: data analysis

Based on table 4.3 above, t-test for average abnormal return statistic test on period before and after stock split announcement is 0.488 and the probability is 0.629 the value of which is more than 0.05. t-table value with df = 32 and 5% significant level is 2.036932, and t-test in Ho accepted area. This shows that there are no significant differences of average abnormal return between periods before and after the stock split announcement. Supported by evidence seen in table 4.2, the average abnormal return on period before and after stock split announcement has positive significant market reaction. In both periods, there is no significant difference because market reactions appear in both periods. These are cause by lacking of the

information toward stock split announcement, and the investor reacts before and after the announcement.

4.2.2. Second Hypothesis Testing (TVA)

4.2.2.1. Hypothesis Formulation

Ho : There is no significant difference of Trading Volume Activity on period before and after stock split.

Ha : There are some significant differences of Trading Volume Activity on period before and after stock split.

4.2.2.2. Hypothesis Testing Process

The difference of average TVA on period before and after stock split, can be seen on table 4.4

Table 4.4

Statistic Result of Average TVA

In Period Before and After Stock Split

Explanation	t-test	Probability	Mean
On period before to period after announcement	-0,413	0,683	-0,00115

Source:Data Analysis

Based on table 4.4 above, t-test for average TVA statistic test on period before and after stock split announcement is -0.413 and the probability is 0.683 the value of which is more than 0.05. t-table value with

df = 32 and 5% significant level is 2.036932, it shows that t-test is accepted in Ho area. And there is no significant difference of average TVA on period before stock split and on period after stock split.

4.3. Research Result Discussion

The announcement of stock split is stated as just influencing average abnormal return before stock split and after stock split. Statistically, the announcement of stock split can be influence the change of decision makes by investor to buy the stock, and to trade trading. The influence of stock split announcement toward stock abnormal return is appropriate with signaling hypothesis or known as information asymmetry hypothesis telling that split give information to investor about company prospect in the future. Split activities that a company does will be interpreted by investor as a signal. The manager has benefit information that shows the abnormal return in all around stock split announcement.

The analysis result about average abnormal return on period before and after stock split announcement, has no significant differences. This gives assumption that the market reaction which happens before stock split, can be seen in all period research. Therefore both periods have positive reaction, and eventually result in significant differences.

Result of TVA comparison shows that there is no significant difference on period before and after stock split announcement. It is because the reaction that happens as explained before has no significant stock

transaction volume, still in lower volume, so the TVA that is compared between trading volumes and stock number is lower.

Statistically, the announcement of stock split can be influence the change of decision making to stock buying by investor. Support by signaling hypothesis is explained by Baker & Powell (1993), signaling hypothesis is known as information asymmetry hypothesis said that split gives a informative signal to investor about company prospect in the future.

CHAPTER V

CONCLUSIONS AND RECOMMENDATION

5.1. Conclusion

This research discussing about stock split at Jakarta Stock Exchange on period 1998-2000 is aimed to know the difference of average abnormal return on day before and after stock split at efficient capital market condition in half strength type. Clearly, this reasearch is to test the hypothesis that the efficient capital market at Jakarta Stock Exchange is a half strength type is because this capital market type is signed with no abnormal return. Abnormal return is used to measure the market reaction as a reflection of price change because of stock split. Hypothesis in this research is that " there is no significant difference of average abnormal return on day before and after the stock split announcement".

Analysis result on chapter 4 that has done previously uses different tests, to get different result, as stated as:

a. There is no significant difference of average abnormal return on period 5 days before and 5 days after stock split announcement.
b. There is no significant difference of average TVA on period 5 days before and 5 days after stock split announcement.

In line with that, it can be concluded as:

1. The announcement of stock split has significant influence toward average abnormal return before and the average abnormal return after stock split, with the other words can be says that the market take the stock split information, so the average abnormal return after stock split is back equally with the average abnormal return before stock split. It is shows that the stock split events at Jakarta Stock Exchange is efficient market in strength type. That is signed with stock abnormal return.
2. Stock split announcement cannot be able to give significant contribution to transaction volume at Jakarta Stock Exchage. It means the number trading volume is lower than the number of outstanding share. It is because the stock split event is split a sheet of stock, in which the number of sheet stock will increase appropriate with the number of the multiplier in that stock split, and eventually make the trading volume (TVA) is lower.

5.2. Recommendation and Implication

1. Based on the conclusions above, it is better for go public companies to anticipate the condition in market before stock split event, by referring the stock split as an informative signal to investor about good company prospect in the future. It will motivate the investor to have positive thinking about stock split announcement, and not to decrease the stock price at the time stock split announcement.

2. In this research, the period takes 5 days before stock split and 5 days after stock split. For other research, it can be considered to add the period of research to 10 days or 15 days in all around stock split, or 5 months before and 5 months after stock split for monthly research. The impact of stock split can be seen in the long time, as done by Jhonson (1996), who needs 12 months, 7.5 months before stock split and 4.5 months after stock split. Fama, Fisher, Jensen, and Roll (FFJR) conduct research about stock split from January 1927 to December 1959that takes 30 month before and after stock split. If the period of research uses daily research, the impact of stock split cannot be seen in less than 7 days (a week). In addition,, if the period of research uses yearly research or long time research (more than a year), it may cause bias result, because of other event which happen in same time with stock split, like right issue, warrant and bonus shares.

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APPENDIX 1

THE LIST OF COMPANY DOING STOCK SPLIT

1998 - 2000

No.	Company	Sector	Stock Split Date
1	Dharmala Iniland tbk	Property	Jan 26, 1998
2	Wahana Jaya Perkasa Tbk	Basic Industry and Chemicals	Feb 12, 1998
3	Toko gunung Agung Tbk	Trading, Service&Investment	Mar 30, 1998
4	Indomobil Sukses International Tbk	Trading, Service&Investment	Apr 27, 1998
5	Intinusa Selareksa Tbk	Miscellaneous Industry	Jul 13, 1998
6	Panca Wiratama Sakti Tbk	Property	Jul 24, 1998
7	Bank Papan Sejahtera Tbk	Financial	Aug 3, 1998
8	Metrodata Electronics Tbk	Trading, Service&Investment	Aug 10, 1998
9	Bank Rama Tbk	Financial	Aug 10, 1998
10	Medeo Energi Corporation Tbk	Mining	Aug 18, 1998
11	Berlina Tbk	Basic Industry and Chemicals	Aug 18, 1998
12	Berlina Tbk	Basic Industry and Chemicals	Aug 19, 1998
13	Bank Tamara Tbk	Financial	Aug 24, 1998
14	Bank Indovest Tbk	Financial	Sept 14, 1998
15	Hotel Prapatan Tbk	Trading, Service&Investment	Sept 21, 1998
16	Intan Wijaya Chemical Indonesia Tbk	Basic Industry and Chemicals	Sept 28, 1998
17	Asuransi Ramayana Tbk	Insurance	Oct 5, 1998
18	Aster Dharma Industry Tbk	Trading, Service&Investment	Oct 5, 1998
19	Duta Pertiwi Nusantara Tbk	Property	Oct 12, 1998
20	Clipan Finance Indonesia Tbk	Financial	Oct 19, 1998
21	Hanson Industri Utama tbk	Miscellaneous Industry	Nov 2, 1998
22	Soedarpo Corporation tbk	Trading, Service&Investment	Feb 3, 1999
23	Hotel Sahid Jaya tbk	Trading, Service&Investment	Jun 4, 1999
24	Suba Indah Tbk	Consumergoods Industry	Jun 9, 1999
25	Dharmala Finance Tbk	Financial	Jul 26, 1999
26	Bank CIC International Tbk	Financial	Aug 1, 1999
27	Igarjaya Tbk	Basic Industry and Chemicals	Aug 16, 1999
28	Bank Global International Tbk	Financial	Aug 16, 1999
29	Ekadharma Tape Indonesia Tbk	Consumergoods Industry	Sept 6, 1999
30	Bhakti Investama Tbk	Financial	Sept 8, 1999
31	Enseval Putra Megatrading Tbk	Trading, Service&Investment	Sept 3, 1999
32	Fajar Surya Wisesa Tbk	Basic Industry and Chemicals	Sept 20, 1999
33	Dankos Laboratories Tbk	Consumergoods Industry	Sept 20, 1999
34	Kalbe Farma Tbk	Consumergoods Industry	Sept 27, 1999
35	Sunson Textile Manufacture Tbk	Miscellaneous Industry	Sept 27, 1999
36	Budi Acid Jaya Tbk	Basic Industry and Chemicals	Sept 28, 1999
37	Kurnia Kapuas Utama tbk	Basic Industry and Chemicals	Sept 29, 1999
38	Bank Pan Indonesia Tbk	Financial	Oct 2, 1999
39	Metrodata Electronics Tbk	Trading, Service&Investment	Dec 9, 1999

No.	Company	Sector	Stock Split Date
44.	Bhakti Investame Tbk	Financial	Feb 8, 2000
45	AGIS Tbk	Financial	Feb 18, 2000
46	Astra Graphia Tbk	Trading, Service&Investment	Mar 7, 2000
47	Sona Topas Tourism Indonesia Tbk	Trading, Service&Investment	Apr 7, 2000
48	Trimegah Securities Tbk	Financial	Apr 24, 2000
49	Bentoel International Investama Tbk	Financial	Apr 25, 2000
50	Tirta Nahakam Plywood Industry	Basic Industry and Chemicals	May 15, 2000
51	Medco Energi International Tbk	Mining	Jun 2, 2000
52	Maskapai Reasuransi Indonesia Tbk	Financial	Aug 8,2000
53	Mitra Rajasa Tbk	Infrastructure	Aug 14, 2000
54	Asiaplast Industries Tbk	Basic Industry and Chemicals	Aug 16, 2000
55	United Tractors Tbk	Miscellaneous Industry	Sept 5, 2000
56	Asuransi Harta Aman Tbk	Financial	Oct 2, 2000
57	Bahtera Adimina Samudra Tbk	Infrastructure	Oct 9, 2000
58	Siawi Trimitra Tbk	Financial	Oct 9, 2000
59	Trias Sentosa Tbk	Basic Industry and Chemicals	Oct 9, 2000
60	Intraco Penta Tbk	Trading, Service&Investment	Nov 6,2000
61	Unilever Indonesia Tbk	Consumergoods Industry	Nov 6,2000
62	Fast Food Indonesia Tbk	Trading, Service&Investment	Dec 5,2000
63	Ever Shine Textlite Industry Tbk	Miscellaneous Industry	Dec 11, 2000
64	Asiana Multikriasi Tbk	Miscellaneous Industry	Dec 18,2000
65	Indofood Sukses Makmur Tbk	Consumergoods Industry	Dec 29,200

APPENDIX 2

LIST OF COMPANY SAMPLE

NO	CODE	COMPANY SAMPLE	DATE OF STOCK SPLIT
1	DILD	Dharmala Intiland Tbk.	January 26, 1998
2	UGAR	Wahana Jaya Perkasa Tbk.	February 12, 1998
3	INCI	Intan Wijaya Chemical Indonesia Tbk.	September 28, 1998
4	DPNS	Duta Pertiwi nusantara Tbk.	October 12, 1998
5	MYRX	Hanson Industri Utama Tbk.	November 02, 1998
6	SUBA	Suba Indah Tbk.	June 09, 1999
7	IGAR	Igarjaya Tbk.	August 16, 1999
8	EKAD	Ekadharma Tape Indonesia Tbk.	September 06, 1999
9	EPMT	Ensesal putra Megatrading tbk.	September 13, 1999
10	DNKS	Dankos Labolatories Tbk.	September 20, 1999
11	KLBF	Kalbe Farma Tbk.	September 27, 1999
12	FASW	Fajar Syurya Wisesa Tbk.	September 20, 1999
13	SSTM	Sunson Textile Manufacture Tbk.	September 27, 1999
14	BUDI	Budi Acid Jaya Tbk.	September 28, 1999
15	KKGI	Kurnia Kapuas Utama Tbk.	September 29, 1999
16	DSUC	Daya sakti Unggul Tbk.	October 18, 1999
17	SUDI	Surya Dumai Industri Tbk.	October 21, 1999
18	LTLS	Lautan Luas Tbk.	November 08, 1999
19	MTDL	Metrodata Electronics Tbk.	December 09, 1999
20	ASGR	Astra Graphia tbk.	March 07,2000
21	SONA	Sona Topas Tourism Indonesia Tbk.	April 07, 2000
22	TIRT	Tirta Mahakam Plywood Industry Tbk.	May 15, 2000
23	MEDC	Medco Energi International Tbk.	June 02, 2000
24	MIRA	Mitra Rajasa Tbk.	August 14, 2000
25	APLI	Asiaplast Industries Tbk.	August 16, 2000
26	UNTR	United Tractors Tbk.	September 05, 2000
27	BASS	Bahtera Adimina Samudra Tbk.	October 09, 2000
28	TRST	Trias Santosa Tbk.	October 09, 2000
29	INTA	Intraco Penta Tbk.	November 06, 2000
30	UNVR	Unilever Indonesia Tbk.	November 06, 2000
31	ESTI	Ever Shine Textile Industry Tbk.	December 11, 2000
32	ASIA	Asiana Multikriasi Tbk.	December 18, 2000
33	INDF	Indofood Sukses Makmur Tbk.	December 29, 2000

APPENDIX 3

DAILY STOCK PRICE DATA OF COMPANY SAMPLE

NO	CODE	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5
1	DILP	950	1200	1200	1000	1000	1000	500	500	500	500	650	650
2	UGAR	1000	1000	1000	1000	1000	1000	500	500	500	500	500	500
3	INCI	550	525	575	575	575	575	375	475	450	400	425	375
4	DPNS	700	725	700	525	600	600	500	400	400	375	400	400
5	MYRX	110	120	130	135	135	125	120	120	120	115	115	110
6	SUBA	700	700	700	700	600	600	300	375	375	375	500	525
7	IGAR	2950	3000	3500	3500	3500	3500	225	200	200	175	200	150
8	EKAD	1900	1400	1400	1400	1400	1400	875	900	925	1075	1075	1075
9	EPMT	1200	1225	1150	1050	1050	1050	675	625	650	675	625	600
10	FASW	1000	1150	1100	1100	1100	1100	500	525	525	475	450	450
11	DNKS	2550	2650	2650	2600	2600	2600	525	525	500	475	500	475
12	KLBF	3125	3075	3000	3000	3000	3000	575	600	550	600	700	700
13	SSTM	1025	1025	1025	1025	1000	1025	600	600	600	625	650	625
14	BUDI	2300	2300	2800	2800	2800	2800	750	675	675	700	650	700
15	KKGI	1300	1300	1300	1225	1225	1225	600	575	575	575	550	600
16	DSUC	1525	1525	1525	1525	1525	1525	700	750	700	775	700	700
17	SUDI	2800	2800	2800	2800	2800	2800	600	600	575	550	525	525
18	LTLS	1800	1775	1800	1850	1900	1925	1000	1000	1000	950	925	900
19	MTDL	6800	7250	7550	7550	7550	7550	825	825	800	825	800	800
20	ASGR	8500	8500	8350	8100	8100	1000	975	950	925	950	900	925
21	SONA	1025	1000	1000	1000	975	975	525	500	500	500	500	500
22	TIRT	1800	1800	1800	2000	2000	2000	450	475	600	750	700	750
23	MEDC	4250	4275	4300	4025	4050	4250	850	850	825	825	825	850
24	MIRA	715	725	790	790	765	750	415	425	470	410	395	385
25	APLI	2440	2440	2385	2005	1605	1480	245	240	250	220	210	175
26	UNTR	1900	1850	1875	1880	1920	1970	490	495	495	490	470	445
27	BASS	2520	2620	2625	2605	2610	2950	600	605	635	645	635	650
28	TRST	500	530	530	520	525	535	105	105	100	95	95	100
29	INTA	1075	1025	1025	1050	1050	1050	525	525	525	525	500	500
30	UNVR	146000	147000	147000	147000	144000	148000	14000	14050	14000	14000	14000	14000
31	ESTI	950	950	950	925	1025	1150	250	235	235	235	235	230
32	ASIA	160	155	155	155	155	170	95	95	95	95	100	100
33	INDF	3835	3710	3800	3800	3810	4025	850	840	790	775	790	775

DAILY IHSG DATA OF COMPANY SAMPLE

NO	CODE	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5
1	DILP	439.0278	448.04	466	443.53	450.98	473.69	476.31	485.94	554.11	536.79	519.93	513.49
2	UGAR	519.929	513.49	535.43	529.25	517.7	487.61	442.29	448.16	457.71	472.21	472.68	496.25
3	INCI	271.6708	256.83	260.88	262.25	282.16	275.22	275	276.01	276.15	273.87	263.23	261.31
4	DPNS	263.2288	261.31	258.11	266.17	288.55	304.84	307.42	313.99	303.19	304.85	337.59	336.42
5	MYRX	313.4151	315.31	318.1	312.29	309.41	300.77	307.2	317.18	330.46	355.53	353.98	364.39
6	SUBA	585.242	583.26	574.32	587.57	612.38	686.95	678.97	664.57	668.28	679.45	670.16	661.85
7	IGAR	607.835	594.11	576.34	554.26	565.22	557.71	560.48	561.37	581.75	576.17	584.8	586.24
8	EKAD	572.667	566.67	567.03	571.78	571.12	565.2	540.43	545.35	520.62	538.02	562.78	569.65
9	EPMT	565.196	540.43	545.35	520.62	538.02	562.78	569.65	562.06	548.61	548.76	547.02	543.33
10	FASW	562.776	569.65	562.06	548.61	548.76	547.02	543.33	547.26	545.45	528.17	517.54	515.07
11	DNKS	562.776	569.65	562.06	548.61	548.76	547.02	543.33	547.26	545.45	528.17	517.54	515.07
12	KLBF	547.017	543.33	547.26	545.45	528.17	517.54	515.07	529.22	526.47	547.94	566.04	553.3
13	SSTM	547.017	543.33	547.26	545.45	528.17	517.54	515.07	529.22	526.47	547.94	566.04	553.3
14	BUDI	543.333	547.26	545.45	528.17	517.54	515.07	529.22	526.47	547.94	566.04	553.3	566.25
15	KKGI	547.264	545.45	528.17	517.54	515.07	529.22	526.47	547.94	566.04	553.3	566.25	588.75
16	DSUC	588.237	584.06	571.38	571.95	567.78	567.92	553.21	583.65	584.43	616.49	604.18	597.07
17	SUDI	571.947	567.78	567.92	553.21	583.65	584.43	616.49	604.18	597.07	594.25	576.52	577.93
18	LTLS	593.869	595.08	594.41	603.59	618.51	626.04	628.31	638.82	638.91	638.49	635.23	635.8
19	MTDL	597.599	598.41	613.49	624.39	621.65	620.98	631.55	633.84	630.56	648.39	652.38	646.51
20	ASGR	568.555	576.54	565.48	546.53	548.55	566.71	562.76	570.05	585.18	596.18	587.58	585.92
21	SONA	585.237	588.73	591.68	583.28	570.9	564.18	570.82	569.62	569.74	564.74	565.11	556.79
22	TIRT	545.61	550.33	547.67	548.24	529.2	526.88	516.43	497.82	514.85	509.41	499.77	495.51
23	MEDC	493.204	490.68	482.07	461.39	468.71	454.33	444.44	453.95	452.76	459.46	478.21	477.93
24	MIRA	494.16	490.54	485.08	483.35	488.61	505.79	504.06	501.57	496.4	494.18	497.39	500.09
25	APLI	550.329	547.67	548.24	529.2	526.88	516.43	497.82	514.85	509.41	499.77	495.51	493.2
26	UNTR	481.66	470.83	469.06	466.38	475.36	478.42	475.55	472.6	470.93	462.54	451.05	442.09
27	BASS	273.868	263.23	261.31	258.11	266.17	288.55	304.84	307.42	313.99	303.19	304.85	337.59
28	TRST	273.868	263.23	261.31	258.11	266.17	288.55	304.84	307.42	313.99	303.19	304.85	337.59
29	INTA	404.115	405.35	409.36	407.96	409.83	415.27	421.03	426.08	421.47	426.97	423.66	425.72
30	UNVR	404.115	405.35	409.36	407.96	409.83	415.27	421.03	426.08	421.47	426.97	423.66	425.72
31	ESTI	429.904	431.44	433.72	435.64	431.81	421.47	415.18	420.44	419.2	423.68	418.55	418.78
32	ASIA	421.473	415.18	420.44	419.2	423.68	418.55	418.78	414.87	415.1	416.32	417.22	417.56
33	INDF	431.702	433.55	434.21	431.24	426.94	425.3	429.21	427.55	429.9	431.44	433.72	435.64

DAILY STOCK RETURN DATA OF COMPANY SAMPLE

NO	CODE	STOCK RETURN										
		-5	-4	-3	-2	-1	0	1	2	3	4	5
1	DILP	0.2632	0	-0.167	0	0	-0.5	0	0	0	0.3	0
2	UGAR	0	0	0	0	0	-0.5	0	0	0	0	0
3	INCI	-0.045	0.0952	0	0	0	-0.348	0.2667	-0.053	-0.111	0.0625	-0.118
4	DPNS	0.0357	-0.034	-0.25	0.1429	0	-0.167	-0.2	0	-0.063	0.0667	0
5	MYRX	0.0909	0.0833	0.0385	0	-0.074	-0.04	0	0	-0.042	0	-0.043
6	SUBA	0	0	0	-0.143	0	-0.5	0.25	0	0	0.3333	0.05
7	IGAR	0.0169	0.1667	0	0	0	-0.936	-0.111	0	-0.125	0.1429	-0.25
8	EKAD	-0.263	0	0	0	0	-0.375	0.0286	0.0278	0.1622	0	0
9	EPMT	0.0208	-0.061	-0.087	0	0	-0.357	-0.074	0.04	0.0385	-0.074	-0.04
10	FASW	0.15	-0.043	0	0	0	-0.545	0.05	0	-0.095	-0.053	0
11	DNKS	0.0392	0	-0.019	0	0	-0.798	0	-0.048	-0.05	0.0526	-0.05
12	KLBF	-0.016	-0.024	0	0	0	-0.808	0.0435	-0.083	0.0909	0.1667	0
13	SSTM	0	0	0	-0.024	0.025	-0.415	0	0	0.0417	0.04	-0.038
14	BUDI	0	0.2174	0	0	0	-0.732	-0.1	0	0.037	-0.071	0.0769
15	KKGI	0	0	-0.058	0	0	-0.51	-0.042	0	0	-0.043	0.0909
16	DSUC	0	0	0	0	0	-0.541	0.0714	-0.067	0.1071	-0.097	0
17	SUDI	0	0	0	0	0	-0.786	0	-0.042	-0.043	-0.045	0
18	LTLS	-0.014	0.0141	0.0278	0.027	0.0132	-0.481	0	0	-0.05	-0.026	-0.027
19	MTDL	0.0662	0.0414	0	0	0	-0.891	0	-0.03	0.0313	-0.03	0
20	ASGR	0	-0.018	-0.03	0	-0.877	-0.025	-0.026	-0.026	0.027	-0.053	0.0278
21	SONA	-0.024	0	0	-0.025	0	-0.462	-0.048	0	0	0	0
22	TIRT	0	0	0.1111	0	0	-0.775	0.0556	0.2632	0.25	-0.067	0.0714
23	MEDC	0.0059	0.0058	-0.064	0.0062	0.0494	-0.8	0	-0.029	0	0	0.0303
24	MIRA	0.014	0.0897	0	-0.032	-0.02	-0.447	0.0241	0.1059	-0.128	-0.037	-0.025
25	APLI	0	-0.023	-0.159	-0.2	-0.078	-0.834	-0.02	0.0417	-0.12	-0.045	-0.167
26	UNTR	-0.026	0.0135	0.0027	0.0213	0.026	-0.751	0.0102	0	-0.01	-0.041	-0.053
27	BASS	0.0397	0.0019	-0.008	0.0019	0.1303	-0.797	0.0083	0.0496	0.0157	-0.016	0.0236
28	TRST	0.06	0	-0.019	0.0096	0.019	-0.804	0	-0.048	-0.05	0	0.0526
29	INTA	-0.047	0	0.0244	0	0	-0.5	0	0	0	-0.048	0
30	UNVR	0.0068	0	0	-0.02	0.0278	-0.905	0.0036	-0.004	0	0	0
31	ESTI	0	0	-0.026	0.1081	0.122	-0.783	-0.06	0	0	0	-0.021
32	ASIA	-0.031	0	0	0	0.0968	-0.441	0	0	0	0.0526	0
33	INDF	-0.033	0.0243	0	0.0026	0.0564	-0.789	-0.012	-0.06	-0.019	0.0194	-0.019

DAILY MARKET RETURN DATA OF COMPANY SAMPLE

NO	CODE	MARKET RETURN										
		-5	-4	-3	-2	-1	0	1	2	3	4	5
1	DILP	0.0205	0.0401	-0.048	0.0168	0.0503	0.0055	0.0202	0.1403	-0.031	-0.031	-0.012
2	UGAR	-0.012	0.0427	-0.012	-0.022	-0.058	-0.093	0.0133	0.0213	0.0317	0.001	0.0499
3	INCI	-0.055	0.0157	0.0053	0.0759	-0.025	-8E-04	0.0037	0.0005	-0.008	-0.039	-0.007
4	DPNS	-0.007	-0.012	0.0312	0.0841	0.0565	0.0085	0.0214	-0.034	0.0055	0.1074	-0.003
5	MYRX	0.006	0.0088	-0.018	-0.009	-0.028	0.0214	0.0325	0.0419	0.0759	-0.004	0.0294
6	SUBA	-0.003	-0.015	0.0231	0.0422	0.1218	-0.012	-0.021	0.0056	0.0167	-0.014	-0.012
7	IGAR	-0.023	-0.03	-0.038	0.0198	-0.013	0.005	0.0016	0.0363	-0.01	0.015	0.0025
8	EKAD	-0.01	0.0006	0.0084	-0.001	-0.01	-0.044	0.0091	-0.045	0.0334	0.046	0.0122
9	EPMT	-0.044	0.0091	-0.045	0.0334	0.046	0.0122	-0.013	-0.024	0.0003	-0.003	-0.007
10	FASW	0.0122	-0.013	-0.024	0.0003	-0.003	-0.007	0.0072	-0.003	-0.032	-0.02	-0.005
11	DNKS	0.0122	-0.013	-0.024	0.0003	-0.003	-0.007	0.0072	-0.003	-0.032	-0.02	-0.005
12	KLBF	-0.007	0.0072	-0.003	-0.032	-0.02	-0.005	0.0275	-0.005	0.0408	0.033	-0.023
13	SSTM	-0.007	0.0072	-0.003	-0.032	-0.02	-0.005	0.0275	-0.005	0.0408	0.033	-0.023
14	BUDI	0.0072	-0.003	-0.032	-0.02	-0.005	0.0275	-0.005	0.0408	0.033	-0.023	0.0234
15	KKGI	-0.003	-0.032	-0.02	-0.005	0.0275	-0.005	0.0408	0.033	-0.023	0.0234	0.0397
16	DSUC	-0.007	-0.022	0.001	-0.007	0.0002	-0.026	0.055	0.0013	0.0549	-0.02	-0.012
17	SUDI	-0.007	0.0002	-0.026	0.055	0.0013	0.0549	-0.02	-0.012	-0.005	-0.03	0.0025
18	LTLS	0.002	-0.001	0.0154	0.0247	0.0122	0.0036	0.0167	0.0001	-7E-04	-0.005	0.0009
19	MTDL	0.0014	0.0252	0.0178	-0.004	-0.001	0.017	0.0036	-0.005	0.0283	0.0062	-0.009
20	ASGR	0.014	-0.019	-0.034	0.0037	0.0331	-0.007	0.013	0.0265	0.0188	-0.014	-0.003
21	SONA	0.006	0.005	-0.014	-0.021	-0.012	0.0118	-0.002	0.0002	-0.009	0.0007	-0.015
22	TIRT	0.0086	-0.005	0.001	-0.035	-0.004	-0.02	-0.036	0.0342	-0.011	-0.019	-0.009
23	MEDC	-0.005	-0.018	-0.043	0.0159	-0.031	-0.022	0.0214	-0.003	0.0148	0.0408	-6E-04
24	MIRA	-0.007	-0.011	-0.004	0.0109	0.0352	-0.003	-0.005	-0.01	-0.004	0.0065	0.0054
25	APLI	-0.005	0.001	-0.035	-0.004	-0.02	-0.036	0.0342	-0.011	-0.019	-0.009	-0.005
26	UNTR	-0.022	-0.004	-0.006	0.0192	0.0064	-0.006	-0.006	-0.004	-0.018	-0.025	-0.02
27	BASS	-0.039	-0.007	-0.012	0.0312	0.0841	0.0565	0.0085	0.0214	-0.034	0.0055	0.1074
28	TRST	-0.039	-0.007	-0.012	0.0312	0.0841	0.0565	0.0085	0.0214	-0.034	0.0055	0.1074
29	INTA	0.003	0.0099	-0.003	0.0046	0.0133	0.0139	0.012	-0.011	0.013	-0.008	0.0049
30	UNVR	0.003	0.0099	-0.003	0.0046	0.0133	0.0139	0.012	-0.011	0.013	-0.008	0.0049
31	ESTI	0.0036	0.0053	0.0044	-0.009	-0.024	-0.015	0.0127	-0.003	0.0107	-0.012	0.0005
32	ASIA	-0.015	0.0127	-0.003	0.0107	-0.012	0.0005	-0.009	0.0006	0.0029	0.0022	0.0008
33	INDF	0.0043	0.0015	-0.007	-0.01	-0.004	0.0092	-0.004	0.0055	0.0036	0.0053	0.0044

CALCULATING EXPECTED RETURN (E(Ri), ABNORMAL RETURN (AR) AND TVA

1. DILD

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.263158	0.0205244	-0.01106	0.106	-0.0089	0.2720	1200	243627000	4.9256E-06
-4	0	0.0400957			-0.0068	0.0068	1100	243627000	4.5151E-06
-3	-0.16667	-0.048227			-0.0162	-0.1505		243627000	0
-2	0	0.0168077			-0.0093	0.0093		243627000	0
-1	0	0.0503384			-0.0057	0.0057		243627000	0
0	-0.5	0.0055425			-0.0105	-0.4895		925782600	0
1	0	0.0202103			-0.0089	0.0089		925782600	0
2	0	0.1402847			0.0039	-0.0039		925782600	0
3	0	-0.031253			-0.0144	0.0144	650	925782600	7.0211E-07
4	0.3	-0.03141			-0.0144	0.3144	650	925782600	7.0211E-07
5	0	-0.012386			-0.0124	0.0124	700	925782600	7.5612E-07

2. UGAR

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	-0.012386	-0.03736	2.408	-0.0672	0.0672		21600000	0
-4	0	0.0427265			0.0655	-0.0655		21600000	0
-3	0	-0.011533			-0.0651	0.0651		21600000	0
-2	0	-0.021828			-0.0899	0.0899		21600000	0
-1	0	-0.058124			-0.1773	0.1773		21600000	0
0	-0.5	-0.092945			-0.2612	-0.2388		43200000	0
1	0	0.0132687			-0.0054	0.0054		43200000	0
2	0	0.0213097			0.0139	-0.0139		43200000	0
3	0	0.0316824			0.0389	-0.0389		43200000	0
4	0	0.0009947			-0.0350	0.0350		43200000	0
5	0	0.0498696			0.0827	-0.0827		43200000	0

3. INCI

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.04545	-0.054614	-0.02172	0.340	-0.0403	-0.0051	114500	88000000	0.00130114
-4	0.095238	0.0157401			-0.0164	0.1116	21000	88000000	0.00023864
-3	0	0.0052638			-0.0199	0.0199		88000000	0
-2	0	0.0759227			0.0041	-0.0041		88000000	0
-1	0	-0.024581			-0.0301	0.0301		88000000	0
0	-0.34783	-0.000812			-0.0220	-0.3258	722500	101200000	0.00713933
1	0.266667	0.0036625			-0.0205	0.2871	1981500	101200000	0.01958004
2	-0.05263	0.0005127			-0.0215	-0.0311	1278500	101200000	0.0126334
3	-0.11111	-0.008263			-0.0245	-0.0866	720500	101200000	0.00711957
4	0.0625	-0.038848			-0.0349	0.0974	467500	101200000	0.00461957
5	-0.11765	-0.007274			-0.0242	-0.0935	427500	101200000	0.00422431

4. DPNS

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.035714	-0.007274	-0.06312	0.879	-0.0695	0.1052	38000	34600500	0.00109825
-4	-0.03448	-0.012275			-0.0739	0.0394	64000	34600500	0.00184968
-3	-0.25	0.0312398			-0.0357	-0.2143		34600500	0
-2	0.142857	0.0840821			0.0108	0.1321		34600500	0
-1	0	0.0564554			-0.0135	0.0135		34600500	0
0	-0.16667	0.0084549			-0.0557	-0.1110	86500	69201000	0.00124998
1	-0.2	0.0213674			-0.0443	-0.1557	310000	69201000	0.0044797
2	0	-0.034385			-0.0933	0.0933	952000	69201000	0.01375703
3	-0.0625	0.0054642			-0.0583	-0.0042	60500	69201000	0.00087426
4	0.066667	0.1073983			0.0313	0.0354	367000	69201000	0.00530339
5	0	-0.003463			-0.0662	0.0662	277000	69201000	0.00400283

5. MYRX

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.090909	0.0060479	0.00569	-0.315	0.0038	0.0871	98000	107800000	0.00090909
-4	0.083333	0.0088494			0.0029	0.0804	2000	107800000	1.8553E-05
-3	0.038462	-0.018267			0.0114	0.0270		107800000	0
-2	0	-0.009218			0.0086	-0.0086		107800000	0
-1	-0.07407	-0.027928			0.0145	-0.0886		107800000	0
0	-0.04	0.0213698			-0.0010	-0.0390		215600000	0
1	0	0.0325029			-0.0045	0.0045	6607500	215600000	0.03064703
2	0	0.0418586			-0.0075	0.0075	1500	215600000	6.9573E-06
3	-0.04167	0.0758617			-0.0182	-0.0235	2000	215600000	9.2764E-06
4	0	-0.00436			0.0071	-0.0071	500	215600000	2.3191E-06
5	-0.04348	0.029421			-0.0036	-0.0399	3500	215600000	1.6234E-05

6. SUBA

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	-0.003387	0.00658	-0.621	0.0087	-0.0087	1500	22500000	6.6667E-05
-4	0	-0.015336			0.0161	-0.0161		22500000	0
-3	0	0.0230779			-0.0078	0.0078		22500000	0
-2	-0.14286	0.0422231			-0.0197	-0.1232	5000	22500000	0.00022222
-1	0	0.1217696			-0.0691	0.0691		22500000	0
0	-0.5	-0.011612			0.0138	-0.5138		45000000	0
1	0.25	-0.02121			0.0198	0.2302	50000	45000000	0.00111111
2	0	0.0055856			0.0031	-0.0031		45000000	0
3	0	0.0167115			-0.0038	0.0038		45000000	0
4	0.333333	-0.013671			0.0151	0.3183	5000	45000000	0.00011111
5	0.05	-0.012397			0.0143	0.0357	20000	45000000	0.00044444

7. IGAR

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.016949	-0.022582	-0.10618	-2.161	-0.0574	0.0743	168500	52500000	0.00320952
-4	0.166667	-0.029904			-0.0416	0.2082	239000	52500000	0.00455238
-3	0	-0.038311			-0.0234	0.0234		52500000	0
-2	0	0.019765			-0.1489	0.1489		52500000	0
-1	0	-0.013285			-0.0775	0.0775		52500000	0
0	-0.93571	0.0049703			-0.1169	-0.8188	7376500	1050000000	0.00702524
1	-0.11111	0.0015772			-0.1096	-0.0015	5225500	1050000000	0.00497667
2	0	0.0363061			-0.1846	0.1846	2093500	1050000000	0.00199381
3	-0.125	-0.00959			-0.0855	-0.0395	243500	1050000000	0.0002319
4	0.142857	0.0149887			-0.1386	0.2814	4164500	1050000000	0.00396619
5	-0.25	0.0024504			-0.1115	-0.1385	2377500	1050000000	0.00226429

8. EKAD

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.26316	-0.010472	-0.03776	3.046	-0.0697	-0.1935	5000	11180400	0.00044721
-4	0	0.0006282			-0.0358	0.0358		11180400	0
-3	0	0.008377			-0.0122	0.0122		11180400	0
-2	0	-0.001156			-0.0413	0.0413		11180400	0
-1	0	-0.010364			-0.0693	0.0693		11180400	0
0	-0.375	-0.043824			-0.1713	-0.2037	5000	44721600	0.0001118
1	0.028571	0.0091113			-0.0100	0.0386	7000	44721600	0.00015652
2	0.027778	-0.045347			-0.1759	0.2037	6000	44721600	0.00013416
3	0.162162	0.0334101			0.0640	0.0981	178000	44721600	0.00398018
4	0	0.0460229			0.1024	-0.1024	6000	44721600	0.00013416
5	0	0.012218			-0.0005	0.0005	44500	44721600	0.00099504

9. EPMT

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.020833	-0.043824	-0.05530	-0.400	-0.0378	0.0586	1.6E+07	228000000	0.0691886
-4	-0.06122	0.0091113			-0.0589	-0.0023	2E+07	228000000	0.08592763
-3	-0.08696	-0.045347			-0.0372	-0.0498	6345500	228000000	0.02783114
-2	0	0.0334101			-0.0687	0.0687		228000000	0
-1	0	0.0460229			-0.0737	0.0737		228000000	0
0	-0.35714	0.012218			-0.0602	-0.2970	4818500	456000000	0.01056689
1	-0.07407	-0.013329			-0.0500	-0.0241	767500	456000000	0.00168311
2	0.04	-0.023925			-0.0457	0.0857	2422000	456000000	0.0053114
3	0.038462	0.0002625			-0.0554	0.0939	1610000	456000000	0.0035307
4	-0.07407	-0.003169			-0.0540	-0.0200	1290000	456000000	0.00282895
5	-0.04	-0.006735			-0.0526	0.0126	2264000	456000000	0.00496491

10. FASW

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.15	0.012218	-0.02049	3.566	0.0231	0.1269	323500	225262617	0.0014361
-4	-0.04348	-0.013329			-0.0680	0.0245	1136500	225262617	0.00504522
-3	0	-0.023925			-0.1058	0.1058		225262617	0
-2	0	0.0002625			-0.0196	0.0196		225262617	0
-1	0	-0.003169			-0.0318	0.0318		225262617	0
0	-0.54545	-0.006735			-0.0445	-0.5010	4602500	675787851	0.00681057
1	0.05	0.007235			0.0053	0.0447	2490000	675787851	0.00368459
2	0	-0.003318			-0.0323	0.0323	1920000	675787851	0.00284113
3	-0.09524	-0.031673			-0.1334	0.0382	704500	675787851	0.00104249
4	-0.05263	-0.020126			-0.0923	0.0396	434000	675787851	0.00064221
5	0	-0.004782			-0.0375	0.0375	156000	675787851	0.00023084

11. DNKS

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.039216	0.012218	-0.07799	0.169	-0.0759	0.1151	874500	127575000	0.00685479
-4	0	-0.013329			-0.0803	0.0803	202000	127575000	0.00158338
-3	-0.01887	-0.023925			-0.0820	0.0632	588500	127575000	0.00461297
-2	0	0.0002625			-0.0779	0.0779		127575000	0
-1	0	-0.003169			-0.0785	0.0785		127575000	0
0	-0.79808	-0.006735			-0.0791	-0.7189	1186000	637875000	0.0018593
1	0	0.007235			-0.0768	0.0768	380500	637875000	0.00059651
2	-0.04762	-0.003318			-0.0786	0.0309	344000	637875000	0.00053929
3	-0.05	-0.031673			-0.0834	0.0334	209500	637875000	0.00032843
4	0.052632	-0.020126			-0.0814	0.1340	97000	637875000	0.00015207
5	-0.05	-0.004782			-0.0788	0.0288	82500	637875000	0.00012934

12. KLBF

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.016	-0.006735	-0.06095	2.777	-0.0797	0.0637	163500	432000000	0.00037847
-4	-0.02439	0.007235			-0.0409	0.0165	194500	432000000	0.00045023
-3	0	-0.003318			-0.0702	0.0702	259000	432000000	0.00059954
-2	0	-0.031673			-0.1489	0.1489		432000000	0
-1	0	-0.020126			-0.1168	0.1168		432000000	0
0	-0.80833	-0.004782			-0.0742	-0.7341	292000	2160000000	0.00013519
1	0.043478	0.0274799			0.0154	0.0281	446000	2160000000	0.00020648
2	-0.08333	-0.0052			-0.0754	-0.0079	1809000	2160000000	0.0008375
3	0.090909	0.0407773			0.0523	0.0386	3418500	2160000000	0.00158264
4	0.166667	0.0330421			0.0308	0.1359	1.2E+07	2160000000	0.00559167
5	0	-0.022504			-0.1234	0.1234	1.6E+07	2160000000	0.00763171

13. SSTM

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	-0.006735	-0.03525	1.189	-0.0433	0.0433	200000	418353500	0.00047806
-4	0	0.007235			-0.0266	0.0266	146000	418353500	0.00034899
-3	0	-0.003318			-0.0392	0.0392	87500	418353500	0.00020915
-2	-0.02439	-0.031673			-0.0729	0.0485	284500	418353500	0.00068005
-1	0.025	-0.020126			-0.0592	0.0842	106000	418353500	0.00025337
0	-0.41463	-0.004782			-0.0409	-0.3737	326500	836707000	0.00039022
1	0	0.0274799			-0.0026	0.0026	282000	836707000	0.00033704
2	0	-0.0052			-0.0414	0.0414	40000	836707000	4.7806E-05
3	0.041667	0.0407773			0.0132	0.0284	311000	836707000	0.0003717
4	0.04	0.0330421			0.0040	0.0360	223500	836707000	0.00026712
5	-0.03846	-0.022504			-0.0620	0.0235	314500	836707000	0.00037588

14. BUDI

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	0.007235	-0.04289	-2.266	-0.0593	0.0593		262500000	0
-4	0.217391	-0.003318			-0.0354	0.2528	90500	262500000	0.00034476
-3	0	-0.031673			0.0289	-0.0289		262500000	0
-2	0	-0.020126			0.0027	-0.0027		262500000	0
-1	0	-0.004782			-0.0321	0.0321		262500000	0
0	-0.73214	0.0274799			-0.1052	-0.6270	265500	1050000000	0.00025286
1	-0.1	-0.0052			-0.0311	-0.0689	193500	1050000000	0.00018429
2	0	0.0407773			-0.1353	0.1353		1050000000	0
3	0.037037	0.0330421			-0.1178	0.1548	5000	1050000000	4.7619E-06
4	-0.07143	-0.022504			0.0081	-0.0795	262500	1050000000	0.00025
5	0.076923	0.0233994			-0.0959	0.1728	243000	1050000000	0.00023143

15. KKGI

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	-0.003318	-0.05963	1.221	-0.0637	0.0637	12500	100000000	0.000125
-4	0	-0.031673			-0.0983	0.0983	5000	100000000	0.00005
-3	-0.05769	-0.020126			-0.0842	0.0265	20000	100000000	0.0002
-2	0	-0.004782			-0.0655	0.0655	17500	100000000	0.000175
-1	0	0.0274799			-0.0261	0.0261		100000000	0
0	-0.5102	-0.0052			-0.0660	-0.4442	406000	250000000	0.001624
1	-0.04167	0.0407773			-0.0099	-0.0318	418000	250000000	0.001672
2	0	0.0330421			-0.0193	0.0193	213500	250000000	0.000854
3	0	-0.022504			-0.0871	0.0871	160500	250000000	0.000642
4	-0.04348	0.0233994			-0.0311	-0.0124	312500	250000000	0.00125
5	0.090909	0.0397315			-0.0111	0.1020	748500	250000000	0.002994

16. DSUC

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	-0.007101	-0.05361	3.409	-0.0778	0.0778	111500	200000000	0.0005575
-4	0	-0.021707			-0.1276	0.1276	252000	200000000	0.00126
-3	0	0.0009888			-0.0502	0.0502		200000000	0
-2	0	-0.007291			-0.0785	0.0785		200000000	0
-1	0	0.0002483			-0.0528	0.0528		200000000	0
0	-0.54098	-0.025893			-0.1419	-0.3991	235000	500000000	0.00047
1	0.071429	0.0550132			0.1339	-0.0625	837000	500000000	0.001674
2	-0.06667	0.001333			-0.0491	-0.0176	1714500	500000000	0.003429
3	0.107143	0.0548659			0.1334	-0.0263	692500	500000000	0.001385
4	-0.09677	-0.019961			-0.1216	0.0249	2168000	500000000	0.004336
5	0	-0.011778			-0.0938	0.0938	602500	500000000	0.001205

17. SUDI

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	-0.007291	-0.07692	-4.861	-0.0415	0.0415		500000000	0
-4	0	0.0002483			-0.0781	0.0781		500000000	0
-3	0	-0.025893			0.0489	-0.0489		500000000	0
-2	0	0.0550132			-0.3443	0.3443		500000000	0
-1	0	0.001333			-0.0834	0.0834		500000000	0
0	-0.78571	0.0548659			-0.3436	-0.4421	37500	2500000000	0.000015
1	0	-0.019961			0.0201	-0.0201	15000	2500000000	0.000006
2	-0.04167	-0.011778			-0.0197	-0.0220	207500	2500000000	0.000083
3	-0.04348	-0.004715			-0.0540	0.0105	907500	2500000000	0.000363
4	-0.04545	-0.029843			0.0681	-0.1136	800000	2500000000	0.00032
5	0	0.0024509			-0.0888	0.0888	375000	2500000000	0.00015

18. LTLS

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.01389	0.0020459	-0.06686	3.190	-0.0603	0.0464	500000	390000000	0.00128205
-4	0.014085	-0.001141			-0.0705	0.0846	274000	390000000	0.00070256
-3	0.027778	0.0154474			-0.0176	0.0454	314500	390000000	0.00080641
-2	0.027027	0.0247239			0.0120	0.0150	290000	390000000	0.00074359
-1	0.013158	0.0121809			-0.0280	0.0412	726500	390000000	0.00186282
0	-0.48052	0.0036148			-0.0553	-0.4252	2202500	780000000	0.00282372
1	0	0.0167323			-0.0135	0.0135	3478000	780000000	0.00445897
2	0	0.000144			-0.0664	0.0664	1272500	780000000	0.00163141
3	-0.05	-0.000657			-0.0690	0.0190	3801000	780000000	0.00487308
4	-0.02632	-0.005109			-0.0832	0.0568	1270500	780000000	0.00162885
5	-0.02703	0.0008942			-0.0640	0.0370	1859500	780000000	0.00238397

19. MTDL

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.066176	0.0013554	-0.04170	-4.436	-0.0477	0.1139	139000	38802354	0.00358226
-4	0.041379	0.0251935			-0.1535	0.1948	140000	38802354	0.00360803
-3	0	0.017769			-0.1205	0.1205		38802354	0
-2	0	-0.004384			-0.0223	0.0223		38802354	0
-1	0	-0.001081			-0.0369	0.0369		38802354	0
0	-0.89073	0.0170312			-0.1173	-0.7735	8638500	388023540	0.02226282
1	0	0.0036196			-0.0578	0.0578	4373000	388023540	0.01126993
2	-0.0303	-0.005181			-0.0187	-0.0116	1178500	388023540	0.00303719
3	0.03125	0.028291			-0.1672	0.1985	2584500	388023540	0.00666068
4	-0.0303	0.0061537			-0.0690	0.0387	5965000	388023540	0.01537278
5	0	-0.00901			-0.0017	0.0017	910000	388023540	0.00234522

20. ASGR

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	0.0140479	-0.07376	-5.820	-0.1555	0.1555	102000	130687500	0.00078049
-4	-0.01765	-0.01919			0.0379	-0.0556	168500	130687500	0.00128934
-3	-0.02994	-0.033511			0.1213	-0.1512	15500	130687500	0.0001186
-2	0	0.0037052			-0.0953	0.0953	181000	130687500	0.00138498
-1	-0.87654	0.0330998			-0.2664	-0.6101	4.4E+07	130687500	0.33516212
0	-0.025	-0.006972			-0.0332	0.0082	1.5E+07	1306875000	0.01139015
1	-0.02564	0.0129594			-0.1492	0.1235	1.9E+07	1306875000	0.01455457
2	-0.02632	0.0265379			-0.2282	0.2019	8729500	1306875000	0.00667967
3	0.027027	0.0188011			-0.1832	0.2102	7757500	1306875000	0.00593592
4	-0.05263	-0.014435			0.0103	-0.0629	2763000	1306875000	0.0021142
5	0.027778	-0.002817			-0.0574	0.0851	3450000	1306875000	0.00263989

21. SONA

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.02439	0.0059719	-0.08192	-6.965	-0.1235	0.0991	20000	165600000	0.00012077
-4	0	0.0050057			-0.1168	0.1168		165600000	0
-3	0	-0.014202			0.0170	-0.0170	185000	165600000	0.00111715
-2	-0.025	-0.021216			0.0658	-0.0908	25000	165600000	0.00015097
-1	0	-0.011769			0.0001	-0.0001	75000	165600000	0.0004529
0	-0.46154	0.0117568			-0.1638	-0.2977	5000	331200000	1.5097E-05
1	-0.04762	-0.002099			-0.0673	0.0197	132500	331200000	0.00040006
2	0	0.0002159			-0.0834	0.0834	193000	331200000	0.00058273
3	0	-0.008781			-0.0208	0.0208	60000	331200000	0.00018116
4	0	0.0006552			-0.0865	0.0865	260500	331200000	0.00078653
5	0	-0.014721			0.0206	-0.0206	175000	331200000	0.00052838

22. TIRT

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	0.008649	0.03466	5.021	0.0781	-0.0781		156000000	0
-4	0	-0.004828			0.0104	-0.0104		156000000	0
-3	0.111111	0.0010371			0.0399	0.0712	1500	156000000	9.6154E-06
-2	0	-0.034727			-0.1397	0.1397	6000	156000000	3.8462E-05
-1	0	-0.004392			0.0126	-0.0126	23000	156000000	0.00014744
0	-0.775	-0.019828			-0.0649	-0.7101	34000	624000000	5.4487E-05
1	0.055556	-0.036038			-0.1463	0.2019	558000	624000000	0.00089423
2	0.263158	0.0342132			0.2065	0.0567	6681000	624000000	0.01070673
3	0.25	-0.010578			-0.0185	0.2685	4.9E+07	624000000	0.07796635
4	-0.06667	-0.018918			-0.0603	-0.0063	4.5E+07	624000000	0.07249599
5	0.071429	-0.00852			-0.0081	0.0796	1.9E+07	624000000	0.02967869

23. MEDC

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.005882	-0.005114	-0.06534	2.715	-0.0792	0.0851	128500	666490290	0.0001928
-4	0.005848	-0.017545			-0.1130	0.1188	102000	666490290	0.00015304
-3	-0.06395	-0.042906			-0.1819	0.1179	67500	666490290	0.00010128
-2	0.006211	0.015863			-0.0223	0.0285	126500	666490290	0.0001898
-1	0.049383	-0.030682			-0.1487	0.1980	306000	666490290	0.00045912
0	-0.8	-0.021762			-0.1244	-0.6756	1130000	3332451450	0.00033909
1	0	0.0213977			-0.0072	0.0072	113500	3332451450	3.4059E-05
2	-0.02941	-0.002621			-0.0725	0.0430	216000	3332451450	6.4817E-05
3	0	0.0147981			-0.0252	0.0252	677500	3332451450	0.0002033
4	0	0.0408088			0.0455	-0.0455	2926500	3332451450	0.00087818
5	0.030303	-0.000586			-0.0669	0.0972	1361500	3332451450	0.00040856

24. MIRA

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.013986	-0.007326	-0.04054	-0.619	-0.0360	0.0500	17500	114000000	0.00015351
-4	0.089655	-0.011131			-0.0336	0.1233	491000	114000000	0.00430702
-3	0	-0.003566			-0.0383	0.0383	90000	114000000	0.00078947
-2	-0.03165	0.0108824			-0.0473	0.0156	180500	114000000	0.00158333
-1	-0.01961	0.035161			-0.0623	0.0427	202500	114000000	0.00177632
0	-0.44667	-0.00342			-0.0384	-0.4082	194000	228000000	0.00085088
1	0.024096	-0.00494			-0.0375	0.0616	3295500	228000000	0.01445395
2	0.105882	-0.010308			-0.0342	0.1400	4309000	228000000	0.01889912
3	-0.12766	-0.004472			-0.0378	-0.0899	2.4E+07	228000000	0.10664035
4	-0.03659	0.0064956			-0.0446	0.0080	5418500	228000000	0.02376535
5	-0.02532	0.0054283			-0.0439	0.0186	132500	228000000	0.00058114

25. APLI

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	-0.004828	-0.07968	6.790	-0.1125	0.1125	5000	260000000	1.9231E-05
-4	-0.02254	0.0010371			-0.0726	0.0501	4500	260000000	1.7308E-05
-3	-0.15933	-0.034727			-0.3155	0.1562	3642000	260000000	0.01400769
-2	-0.1995	-0.004392			-0.1095	-0.0900	2157000	260000000	0.00829615
-1	-0.07788	-0.019828			-0.2143	0.1364	1646000	260000000	0.00633077
0	-0.83446	-0.036038			-0.3244	-0.5101	1.2E+08	1300000000	0.09319192
1	-0.02041	0.0342132			0.1526	-0.1731	3282000	1300000000	0.00252462
2	0.041667	-0.010578			-0.1515	0.1932	3.2E+07	1300000000	0.02462769
3	-0.12	-0.018918			-0.2081	0.0881	5.9E+07	1300000000	0.04572769
4	-0.04545	-0.00852			-0.1375	0.0921	5.8E+07	1300000000	0.04456885
5	-0.16667	-0.004654			-0.1113	-0.0554	4.1E+07	1300000000	0.03170308

26. UNTR

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.02632	-0.022485	-0.06636	0.923	-0.0871	0.0608	422000	138000000	0.00305797
-4	0.013514	-0.003759			-0.0698	0.0833	263000	138000000	0.0019058
-3	0.002667	-0.005714			-0.0716	0.0743	113500	138000000	0.00082246
-2	0.021277	0.0192461			-0.0486	0.0699	178500	138000000	0.00129348
-1	0.026042	0.0064499			-0.0604	0.0864	434000	138000000	0.00314493
0	-0.75127	-0.006011			-0.0719	-0.6794	3415000	386400000	0.00883799
1	0.010204	-0.006197			-0.0721	0.0823	6249000	386400000	0.01617236
2	0	-0.003542			-0.0696	0.0696	4610000	386400000	0.01193064
3	-0.0101	-0.01781			-0.0828	0.0727	2095500	386400000	0.00542314
4	-0.04082	-0.024848			-0.0893	0.0485	900000	386400000	0.00232919
5	-0.05319	-0.019852			-0.0847	0.0315	788500	386400000	0.00204063

27. BASS

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.039683	-0.038848	-0.03012	-0.980	0.0080	0.0317	133000	326557700	0.00040728
-4	0.001908	-0.007274			-0.0230	0.0249	89000	326557700	0.00027254
-3	-0.00762	-0.012275			-0.0181	0.0105	85000	326557700	0.00026029
-2	0.001919	0.0312398			-0.0607	0.0627	71000	326557700	0.00021742
-1	0.130268	0.0840821			-0.1125	0.2428	3178000	326557700	0.00973182
0	-0.79661	0.0564554			-0.0855	-0.7111	8602000	1632788500	0.00526829
1	0.008333	0.0084549			-0.0384	0.0467	5746000	1632788500	0.00351913
2	0.049587	0.0213674			-0.0511	0.1007	5882500	1632788500	0.00360273
3	0.015748	-0.034385			0.0036	0.0122	1.6E+07	1632788500	0.00974529
4	-0.0155	0.0054642			-0.0355	0.0200	1806500	1632788500	0.00110639
5	0.023622	0.1073983			-0.1354	0.1590	4494500	1632788500	0.00275265

28. TRST

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.06	-0.038848	-0.04902	-1.081	-0.0070	0.0670	6905000	288000000	0.02397569
-4	0	-0.007274			-0.0412	0.0412	1517500	288000000	0.0052691
-3	-0.01887	-0.012275			-0.0357	0.0169	878000	288000000	0.00304861
-2	0.009615	0.0312398			-0.0828	0.0924	1163000	288000000	0.00403819
-1	0.019048	0.0840821			-0.1399	0.1590	8911500	288000000	0.03094271
0	-0.80374	0.0564554			-0.1101	-0.6937	8796000	432000000	0.02036111
1	0	0.0084549			-0.0582	0.0582	2853500	432000000	0.00660532
2	-0.04762	0.0213674			-0.0721	0.0245	5462000	432000000	0.01264352
3	-0.05	-0.034385			-0.0118	-0.0382	3740500	432000000	0.00865856
4	0	0.0054642			-0.0549	0.0549	1601000	432000000	0.00370602
5	0.052632	0.1073983			-0.1651	0.2178	1130000	432000000	0.00261574

29. INTA

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.04651	0.0030486	-0.02653	-5.284	-0.0426	-0.0039	1000	87000000	1.1494E-05
-4	0	0.0099051			-0.0789	0.0789		87000000	0
-3	0.02439	-0.003422			-0.0084	0.0328	1000	87000000	1.1494E-05
-2	0	0.0045911			-0.0508	0.0508	32500	87000000	0.00037356
-1	0	0.0132566			-0.0966	0.0966		87000000	0
0	-0.5	0.013885			-0.0999	-0.4001	81000	174000000	0.00046552
1	0	0.0119777			-0.0898	0.0898	14500	174000000	8.3333E-05
2	0	-0.010806			0.0306	-0.0306	42000	174000000	0.00024138
3	0	0.0130448			-0.0955	0.0955		174000000	0
4	-0.04762	-0.007743			0.0144	-0.0620	23000	174000000	0.00013218
5	0	0.0048505			-0.0522	0.0522		174000000	0

30. UNVR

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0.006849	0.0030486	-0.03183	-10.289	-0.0632	0.0700	2000	76300000	2.6212E-05
-4	0	0.0099051			-0.1337	0.1337		76300000	0
-3	0	-0.003422			0.0034	-0.0034		76300000	0
-2	-0.02041	0.0045911			-0.0791	0.0587	500	76300000	6.5531E-06
-1	0.027778	0.0132566			-0.1682	0.1960	1000	76300000	1.3106E-05
0	-0.90541	0.013885			-0.1747	-0.7307	22000	763000000	2.8834E-05
1	0.003571	0.0119777			-0.1551	0.1586	18000	763000000	2.3591E-05
2	-0.00356	-0.010806			0.0793	-0.0829	74000	763000000	9.6986E-05
3	0	0.0130448			-0.1660	0.1660	30500	763000000	3.9974E-05
4	0	-0.007743			0.0478	-0.0478	10500	763000000	1.3761E-05
5	0	0.0048505			-0.0817	0.0817	1500	763000000	1.9659E-06

31. ESTI

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	0	0.0035613	-0.05042	4.137	-0.0357	0.0357	2500	403041744	6.2028E-06
-4	0	0.0053009			-0.0285	0.0285	2000	403041744	4.9623E-06
-3	-0.02632	0.0044268			-0.0321	0.0058	2500	403041744	6.2028E-06
-2	0.108108	-0.008801			-0.0868	0.1949	134500	403041744	0.00033371
-1	0.121951	-0.023934			-0.1494	0.2714	235000	403041744	0.00058307
0	-0.78261	-0.014938			-0.1122	-0.6704	147500	2015208720	7.3193E-05
1	-0.06	0.0126717			0.0020	-0.0620	50000	2015208720	2.4811E-05
2	0	-0.002954			-0.0626	0.0626	280000	2015208720	0.00013894
3	0	0.0107062			-0.0061	0.0061	330000	2015208720	0.00016375
4	0	-0.01211			-0.1005	0.1005	1000000	2015208720	0.00049623
5	-0.02128	0.0005495			-0.0481	0.0269	37500	2015208720	1.8608E-05

32. ASIA

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.03125	-0.014938	-0.03056	-1.466	-0.0087	-0.0226	849000	484007148	0.00175411
-4	0	0.0126717			-0.0491	0.0491	720500	484007148	0.00148861
-3	0	-0.002954			-0.0262	0.0262	327500	484007148	0.00067664
-2	0	0.0107062			-0.0462	0.0462	218000	484007148	0.00045041
-1	0.096774	-0.01211			-0.0128	0.1096	2826500	484007148	0.00583979
0	-0.44118	0.0005495			-0.0314	-0.4098	217500	806678580	0.00026962
1	0	-0.009344			-0.0169	0.0169	179000	806678580	0.0002219
2	0	0.0005616			-0.0314	0.0314	306500	806678580	0.00037995
3	0	0.0029342			-0.0349	0.0349	153500	806678580	0.00019029
4	0.052632	0.0021594			-0.0337	0.0864	943500	806678580	0.00116961
5	0	0.0008149			-0.0318	0.0318		806678580	0

33. INDF

Period	Rit	Rmt	α	β	E(Rit)	AR	Volume	OutStanding Share	TVA
-5	-0.03259	0.0042761	-0.05852	-19.878	-0.1435	0.1109	2222000	1831200000	0.00121341
-4	0.024259	0.0015292			-0.0889	0.1132	1181500	1831200000	0.00064521
-3	0	-0.006842			0.0775	-0.0775	1136000	1831200000	0.00062036
-2	0.002632	-0.009964			0.1396	-0.1369	776000	1831200000	0.00042377
-1	0.05643	-0.003844			0.0179	0.0385	2293000	1831200000	0.00125218
0	-0.78882	0.0091982			-0.2414	-0.5475	6.9E+07	9156000000	0.00758634
1	-0.01176	-0.003872			0.0185	-0.0302	2E+07	9156000000	0.00219971
2	-0.05952	0.0055011			-0.1679	0.1083	4E+07	9156000000	0.00437462
3	-0.01899	0.0035613			-0.1293	0.1103	7.1E+07	9156000000	0.00779363
4	0.019355	0.0053009			-0.1639	0.1832	4.9E+07	9156000000	0.00540607
5	-0.01899	0.0044268			-0.1465	0.1275	1.6E+07	9156000000	0.00177255

APPENDIX 8

NO	CODE	AVERAGE OF ABNORMAL RETURN	
		BEFORE	AFTER
1	DILP	0.02866	0.06924
2	UGAR	0.06681	-0.01904
3	INCI	0.03047	0.03469
4	DPNS	0.01518	0.00701
5	MYRX	0.01948	-0.01169
6	SUBA	-0.01423	0.11699
7	IGAR	0.10647	0.05729
8	EKAD	-0.00696	0.04770
9	EPMT	0.02978	0.02961
10	FASW	0.06172	0.03847
11	DNKS	0.08301	0.06078
12	KLBF	0.08320	0.06362
13	SSTM	0.04836	0.02638
14	BUDI	0.06250	0.06290
15	KKGI	0.05600	0.03284
16	DSUC	0.07737	0.00245
17	SUDI	0.09968	-0.01126
18	LTLS	0.04651	0.03853
19	MTDL	0.09768	0.05701
20	ASGR	-0.11322	0.11158
21	SONA	0.02160	0.03795
22	TIRT	0.02197	0.12005
23	MEDC	0.10967	0.02544
24	MIRA	0.05399	0.02766
25	APLI	0.07303	0.02899
26	UNTR	0.07495	0.06092
27	BASS	0.07452	0.06771
28	TRST	0.07529	0.06344
29	INTA	0.05104	0.02898
30	UNVR	0.09101	0.05513
31	ESTI	0.10725	0.02683
32	ASIA	0.04172	0.04024
33	INDF	0.00965	0.09985

APPENDIX 9

NO	CODE	THE AVERAGE OF TVA	
		BEFORE	AFTER
1	DILP	0.0000019	0.0000004
2	UGAR	0.0000000	0.0000000
3	INCI	0.0003080	0.0096354
4	DPNS	0.0005896	0.0056834
5	MYRX	0.0001855	0.0061364
6	SUBA	0.0000578	0.0003333
7	IGAR	0.0015524	0.0026866
8	EKAD	0.0000894	0.0010800
9	EPMT	0.0365895	0.0036638
10	FASW	0.0012963	0.0016883
11	DNKS	0.0026102	0.0003491
12	KLBF	0.0002856	0.0031700
13	SSTM	0.0003939	0.0002799
14	BUDI	0.0000690	0.0001341
15	KKGI	0.0001100	0.0014824
16	DSUC	0.0003635	0.0024058
17	SUDI	0.0000000	0.0001844
18	LTLS	0.0010795	0.0029953
19	MTDL	0.0014381	0.0077372
20	ASGR	0.0677471	0.0063848
21	SONA	0.0003684	0.0004958
22	TIRT	0.0000391	0.0383484
23	MEDC	0.0002192	0.0003178
24	MIRA	0.0017219	0.0328680
25	APLI	0.0057342	0.0298304
26	UNTR	0.0020449	0.0075792
27	BASS	0.0021779	0.0041452
28	TRST	0.0134549	0.0068458
29	INTA	0.0000793	0.0000914
30	UNVR	0.0000092	0.0000353
31	ESTI	0.0001868	0.0001685
32	ASIA	0.0020419	0.0003923
33	INDF	0.0008310	0.0043093

CALCULATING α,β

DHARMALA INTILAND Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm DILP[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: RI DILP

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.026[a]	.001	-.110	.22003851

a. Predictors: (Constant), Rm DILP

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	.006	.939[a]
	Residual	.436	9	.048		
	Total	.436	10			

a. Predictors: (Constant), Rm DILP

b. Dependent Variable: RI DILP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.106E-02	.070		-.159	.877
	Rm DILP	.106	1.345	.026	.079	.939

a. Dependent Variable: RI DILP

CALCULATING α,β

WAHANA JAYA PERKASA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm UGAR[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri UGAR

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.689[a]	.475	.416	.11519241

a. Predictors: (Constant), Rm UGAR

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.108	1	.108	8.128	.019[a]
	Residual	.119	9	.013		
	Total	.227	10			

a. Predictors: (Constant), Rm UGAR

b. Dependent Variable: Ri UGAR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-3.736E-02	.035		-1.072	.312
	Rm UGAR	2.408	.845	.689	2.851	.019

a. Dependent Variable: Ri UGAR

CALCULATING α,β

INTAN WIJAYA CHEMICAL INDONESIA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm INCI[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri INCI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.075[a]	.006	-.105	.15954987

a. Predictors: (Constant), Rm INCI

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.051	.827[a]
	Residual	.229	9	.025		
	Total	.230	10			

a. Predictors: (Constant), Rm INCI

b. Dependent Variable: Ri INCI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.172E-02	.048		-.450	.664
	Rm INCI	.340	1.510	.075	.225	.827

a. Dependent Variable: Ri INCI

CALCULATING α,β

DUTA PERTIWI NUSANTARA Tbk.

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm DPNS[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri DPNS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.320[a]	.102	.002	.11883713

a. Predictors: (Constant), Rm DPNS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.014	1	.014	1.024	.338[a]
	Residual	.127	9	.014		
	Total	.142	10			

a. Predictors: (Constant), Rm DPNS

b. Dependent Variable: Ri DPNS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.312E-02	.041		-1.533	.160
	Rm DPNS	.879	.869	.320	1.012	.338

a. Dependent Variable: Ri DPNS

CALCULATING α,β

HANSON INDUSTRI UTAMA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm MIRX[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri MYRX

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.180[a]	.033	-.075	.05425624

a. Predictors: (Constant), Rm MIRX

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.303	.596[a]
	Residual	.026	9	.003		
	Total	.027	10			

a. Predictors: (Constant), Rm MIRX

b. Dependent Variable: Ri MYRX

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.693E-03	.018		.312	.762
	Rm MIRX	-.315	.572	-.180	-.550	.596

a. Dependent Variable: Ri MYRX

CALCULATING α,β

SUBA INDAH Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm SUBA[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri SUBA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.121[a]	.015	-.095	.22109099

a. Predictors: (Constant), Rm SUBA

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.007	1	.007	.135	.722[a]
	Residual	.440	9	.049		
	Total	.447	10			

a. Predictors: (Constant), Rm SUBA

b. Dependent Variable: Ri SUBA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.576E-03	.070		.094	.927
	Rm SUBA	-.621	1.693	-.121	-.367	.722

a. Dependent Variable: Ri SUBA

CALCULATING α,β

IGAR JAYA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm IGAR[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri IGAR

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.161[a]	.026	-.082	.31306206

a. Predictors: (Constant), Rm IGAR

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.023	1	.023	.238	.637[a]
	Residual	.882	9	.098		
	Total	.905	10			

a. Predictors: (Constant), Rm IGAR

b. Dependent Variable: Ri IGAR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.106	.095		-1.114	.294
	Rm IGAR	-2.161	4.425	-.161	-.488	.637

a. Dependent Variable: Ri IGAR

CALCULATING α,β

EKADHARMA TAPE INDONESIA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm EKAD[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri EKAD

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.569[a]	.324	.248	.12909782

a. Predictors: (Constant), Rm EKAD

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.072	1	.072	4.305	.068[a]
	Residual	.150	9	.017		
	Total	.222	10			

a. Predictors: (Constant), Rm EKAD

b. Dependent Variable: Ri EKAD

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.776E-02	.039		-.970	.357
	Rm EKAD	3.046	1.468	.569	2.075	.068

a. Dependent Variable: Ri EKAD

CALCULATING α,β

ENSEVAL PUTRA MEGATRADING Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm EPMT[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri EMPT

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.103[a]	.011	-.099	.11621431

a. Predictors: (Constant), Rm EPMT

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.096	.763[a]
	Residual	.122	9	.014		
	Total	.123	10			

a. Predictors: (Constant), Rm EPMT

b. Dependent Variable: Ri EMPT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.530E-02	.035		-1.567	.151
	Rm EPMT	-.400	1.288	-.103	-.310	.763

a. Dependent Variable: Ri EMPT

CALCULATING α,β

FAJAR SURYA WISESA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm FASW[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri FASW

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.268[a]	.072	-.031	.17880136

a. Predictors: (Constant), Rm FASW

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.022	1	.022	.698	.425[a]
	Residual	.288	9	.032		
	Total	.310	10			

a. Predictors: (Constant), Rm FASW

b. Dependent Variable: Ri FASW

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.049E-02	.064		-.322	.755
	Rm FASW	3.566	4.267	.268	.836	.425

a. Dependent Variable: Ri FASW

CALCULATING α,β

DANKOS LABORATORIES Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm DNKS[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri DNKS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.009[a]	.000	-.111	.25376464

a. Predictors: (Constant), Rm DNKS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	.001	.978[a]
	Residual	.580	9	.064		
	Total	.580	10			

a. Predictors: (Constant), Rm DNKS

b. Dependent Variable: Ri DNKS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.799E-02	.090		-.863	.411
	Rm DNKS	.169	6.056	.009	.028	.978

a. Dependent Variable: Ri DNKS

CALCULATING α,β

KALBE FARMA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm KLBF[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri KLBF

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.254[a]	.065	-.039	.26247089

a. Predictors: (Constant), Rm KLBF

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.043	1	.043	.623	.450[a]
	Residual	.620	9	.069		
	Total	.663	10			

a. Predictors: (Constant), Rm KLBF

b. Dependent Variable: Ri KLBF

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.095E-02	.079		-.769	.462
	Rm KLBF	2.777	3.519	.254	.789	.450

a. Dependent Variable: Ri KLBF

CALCULATING α,β

SUNSON TEXTILE MANUFACTURE Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm SSTM[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri SSTM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.218[a]	.048	-.058	.13232436

a. Predictors: (Constant), Rm SSTM

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.008	1	.008	.449	.519[a]
	Residual	.158	9	.018		
	Total	.165	10			

a. Predictors: (Constant), Rm SSTM

b. Dependent Variable: Ri SSTM

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.525E-02	.040		-.882	.401
	Rm SSTM	1.189	1.774	.218	.670	.519

a. Dependent Variable: Ri SSTM

CALCULATING α,β

BUDI ACID JAYA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm BUDI[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri BUDI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.229[a]	.053	-.053	.24621383

a. Predictors: (Constant), Rm BUDI

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.030	1	.030	.500	.497[a]
	Residual	.546	9	.061		
	Total	.576	10			

a. Predictors: (Constant), Rm BUDI

b. Dependent Variable: Ri BUDI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-4.289E-02	.075		-.569	.583
	Rm BUDI	-2.266	3.204	-.229	-.707	.497

a. Dependent Variable: Ri BUDI

CALCULATING α,β

KURNIA KAPUAS UTAMA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm KKGI[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri KKGI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.207[a]	.043	-.064	.16202183

a. Predictors: (Constant), Rm KKGI

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.011	1	.011	.402	.542[a]
	Residual	.236	9	.026		
	Total	.247	10			

a. Predictors: (Constant), Rm KKGI

b. Dependent Variable: Ri KKGI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.963E-02	.051		-1.177	.269
	Rm KKGI	1.221	1.926	.207	.634	.542

a. Dependent Variable: Ri KKGI

CALCULATING α,β

JAYA SAKTI UNGGUL Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm DSUC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri DSUC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.551[a]	.304	.226	.15180620

a. Predictors: (Constant), Rm DSUC

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.091	1	.091	3.928	.079[a]
	Residual	.207	9	.023		
	Total	.298	10			

a. Predictors: (Constant), Rm DSUC

b. Dependent Variable: Ri DSUC

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.361E-02	.046		-1.169	.273
	Rm DSUC	3.409	1.720	.551	1.982	.079

a. Dependent Variable: Ri DSUC

CALCULATING α,β

SURYA DUMAI INDUSTRI Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm SUDI[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri SUDI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.595[a]	.354	.283	.19804176

a. Predictors: (Constant), Rm SUDI

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.194	1	.194	4.939	.053[a]
	Residual	.353	9	.039		
	Total	.547	10			

a. Predictors: (Constant), Rm SUDI

b. Dependent Variable: Ri SUDI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.692E-02	.060		-1.287	.230
	Rm SUDI	-4.861	2.187	-.595	-2.222	.053

a. Dependent Variable: Ri SUDI

CALCULATING α, β

LAUTAN LUAS Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm LTLS[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri LTLS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.207[a]	.043	-.064	.15041600

a. Predictors: (Constant), Rm LTLS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.009	1	.009	.402	.542[a]
	Residual	.204	9	.023		
	Total	.213	10			

a. Predictors: (Constant), Rm LTLS

b. Dependent Variable: Ri LTLS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.686E-02	.055		-1.211	.257
	Rm LTLS	3.190	5.034	.207	.634	.542

a. Dependent Variable: Ri LTLS

CALCULATING α, β

METRODATA ELECTRONICS Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm MTDL[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri MTDL

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.209[a]	.044	-.063	.28085897

a. Predictors: (Constant), Rm MTDL

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.032	1	.032	.410	.538[a]
	Residual	.710	9	.079		
	Total	.742	10			

a. Predictors: (Constant), Rm MTDL

b. Dependent Variable: Ri MTDL

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.170E-02	.098		-.424	.682
	Rm MTDL	-4.436	6.927	-.209	-.640	.538

a. Dependent Variable: Ri MTDL

CALCULATING α,β

ASTRA GRAPHIA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm ASGR[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri ASGR

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.455[a]	.207	.119	.24562501

a. Predictors: (Constant), Rm ASGR

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.142	1	.142	2.355	.159[a]
	Residual	.543	9	.060		
	Total	.685	10			

a. Predictors: (Constant), Rm ASGR

b. Dependent Variable: Ri ASGR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.376E-02	.075		-.985	.350
	Rm ASGR	-5.820	3.793	-.455	-1.535	.159

a. Dependent Variable: Ri ASGR

CALCULATING α, β

SONA TOPAS TOURISM INDONESIA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm SONA[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri SONA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.525[a]	.275	.195	.12307800

a. Predictors: (Constant), Rm SONA

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.052	1	.052	3.420	.097[a]
	Residual	.136	9	.015		
	Total	.188	10			

a. Predictors: (Constant), Rm SONA

b. Dependent Variable: Ri SONA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-8.192E-02	.041		-2.010	.075
	Rm SONA	-6.965	3.766	-.525	-1.849	.097

a. Dependent Variable: Ri SONA

CALCULATING α, β

TIRTA MAHAKAM PLYWOOD INDUSTRY Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TIRT[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri TIRT

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.362[a]	.131	.034	.27030746

a. Predictors: (Constant), TIRT

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.099	1	.099	1.355	.274[a]
	Residual	.658	9	.073		
	Total	.757	10			

a. Predictors: (Constant), TIRT

b. Dependent Variable: Ri TIRT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.466E-02	.089		.388	.707
	TIRT	5.021	4.313	.362	1.164	.274

a. Dependent Variable: Ri TIRT

CALCULATING α, β

MEDCO ENERGI INTERNATIONAL Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm MEDC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri MEDC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.276[a]	.076	-.026	.24624844

a. Predictors: (Constant), Rm MEDC

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.045	1	.045	.744	.411[a]
	Residual	.546	9	.061		
	Total	.591	10			

a. Predictors: (Constant), Rm MEDC

b. Dependent Variable: Ri MEDC

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.534E-02	.075		-.875	.404
	Rm MEDC	2.715	3.148	.276	.863	.411

a. Dependent Variable: Ri MEDC

CALCULATING α,β

MITRA RAJASA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm MIRA[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri_MIRA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.055[a]	.003	-.108	.15627454

a. Predictors: (Constant), Rm MIRA

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.028	.871[a]
	Residual	.220	9	.024		
	Total	.220	10			

a. Predictors: (Constant), Rm MIRA

b. Dependent Variable: Ri_MIRA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.054E-02	.047		-.857	.414
	Rm MIRA	-.619	3.721	-.055	-.166	.871

a. Dependent Variable: Ri_MIRA

CALCULATING α, β

ASIAPLAST INDUATRIES Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm APLI[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri APLI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.537[a]	.288	.209	.21421913

a. Predictors: (Constant), Rm APLI

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.167	1	.167	3.648	.088[a]
	Residual	.413	9	.046		
	Total	.580	10			

a. Predictors: (Constant), Rm APLI

b. Dependent Variable: Ri APLI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.968E-02	.073		-1.087	.305
	Rm APLI	6.790	3.555	.537	1.910	.088

a. Dependent Variable: Ri APLI

CALCULATING α,β

UNITED TRACTORS Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm UNTR[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri UNTR

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.054[a]	.003	-.108	.23811641

a. Predictors: (Constant), Rm UNTR

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.026	.875[a]
	Residual	.510	9	.057		
	Total	.512	10			

a. Predictors: (Constant), Rm UNTR

b. Dependent Variable: Ri UNTR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.636E-02	.084		-.788	.451
	Rm UNTR	.923	5.724	.054	.161	.875

a. Dependent Variable: Ri UNTR

CALCULATING α,β

BAHTERA ADIMINA SAMUDRA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm BASS[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri BASS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.182[a]	.033	-.074	.26002187

a. Predictors: (Constant), Rm BASS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.021	1	.021	.309	.592[a]
	Residual	.609	9	.068		
	Total	.629	10			

a. Predictors: (Constant), Rm BASS

b. Dependent Variable: Ri BASS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.012E-02	.086		-.350	.734
	Rm BASS	-.980	1.763	-.182	-.556	.592

a. Dependent Variable: Ri BASS

CALCULATING α,β

TRIAS SENTOSA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm TRTS[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri TRST

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.205[a]	.042	-.064	.25327942

a. Predictors: (Constant), Rm TRTS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.025	1	.025	.396	.545[a]
	Residual	.577	9	.064		
	Total	.603	10			

a. Predictors: (Constant), Rm TRTS

b. Dependent Variable: Ri TRST

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.902E-02	.084		-.585	.573
	Rm TRTS	-1.081	1.717	-.205	-.630	.545

a. Dependent Variable: Ri TRST

CALCULATING α,β

INTRACO PENTA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm INTA[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri INTA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.309[a]	.095	-.005	.15054744

a. Predictors: (Constant), Rm INTA

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.022	1	.022	.950	.355[a]
	Residual	.204	9	.023		
	Total	.226	10			

a. Predictors: (Constant), Rm INTA

b. Dependent Variable: Ri INTA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.653E-02	.052		-.508	.624
	Rm INTA	-5.284	5.421	-.309	-.975	.355

a. Dependent Variable: Ri INTA

CALCULATING α, β

UNILEVER INDONESIA Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm UNVR[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri UNVR

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.330[a]	.109	.010	.27227149

a. Predictors: (Constant), Rm UNVR

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.082	1	.082	1.101	.321[a]
	Residual	.667	9	.074		
	Total	.749	10			

a. Predictors: (Constant), Rm UNVR

b. Dependent Variable: Ri UNVR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.183E-02	.095		-.337	.744
	Rm UNVR	-10.289	9.804	-.330	-1.049	.321

a. Dependent Variable: Ri UNVR

CALCULATING α,β

EVER SHINE TEXTILE INDUSTRY Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm ESTI[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri ESTI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.192[a]	.037	-.070	.25425819

a. Predictors: (Constant), Rm ESTI

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.022	1	.022	.346	.571[a]
	Residual	.582	9	.065		
	Total	.604	10			

a. Predictors: (Constant), Rm ESTI

b. Dependent Variable: Ri ESTI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.042E-02	.078		-.643	.536
	Rm ESTI	4.137	7.037	.192	.588	.571

a. Dependent Variable: Ri ESTI

CALCULATING α,β

ASIANA MULTIKRIASI Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm ASIA[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri ASIA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.090[a]	.008	-.102	.14781953

a. Predictors: (Constant), Rm ASIA

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	1	.002	.074	.792[a]
	Residual	.197	9	.022		
	Total	.198	10			

a. Predictors: (Constant), Rm ASIA

b. Dependent Variable: Ri ASIA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.056E-02	.045		-.682	.512
	Rm ASIA	-1.466	5.404	-.090	-.271	.792

a. Dependent Variable: Ri ASIA

CALCULATING α, β

INDOFOOD SUKSES MAKMUR Tbk

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Rm INDF[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Ri INDF

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.502[a]	.252	.169	.21749280

a. Predictors: (Constant), Rm INDF

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.144	1	.144	3.040	.115[a]
	Residual	.426	9	.047		
	Total	.570	10			

a. Predictors: (Constant), Rm INDF

b. Dependent Variable: Ri INDF

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.852E-02	.066		-.883	.400
	Rm INDF	-19.878	11.401	-.502	-1.744	.115

a. Dependent Variable: Ri INDF

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Day t–5 Before Stock Split	33	.0600786	.07521476	.01309321
Day t–4 Before Stock Split	33	.0690407	.07061626	.01229271
Day t–3 Before Stock Split	33	.0146969	.07895449	.01363976
Day t–2 Before Stock Split	33	.0517844	.09185068	.01598915
Day t–1 Before Stock Split	33	.0595779	.14201285	.02472126
When Stock Split	33	-.4821951	.21753404	.03786782
Day t+1 after Stock Split	33	.0313563	.09561002	.01664357
Day t+2 after Stock Split	33	.0542833	.07356562	.01280613
Day t+3 after Stock Split	33	.0479395	.08312205	.01446969
Day t+4 after Stock Split	33	.0505515	.10710115	.01864392
Day t+5 after Stock Split	33	.0428840	.07623454	.01327073

One-Sample Statistics

	Test Value					
	t	df	Sig. (2tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Day t–5 Before Stock Split	4.589	32	.000	.0600786	.0334086	.0867486
Day t–4 Before Stock Split	5.616	32	.000	.0690407	.0440013	.0940802
Day t–3 Before Stock Split	1.078	32	.289	.0146969	-.0130843	.0424822
Day t–2 Before Stock Split	3.239	32	.003	.0517844	.0192155	.0843532
Day t–1 Before Stock Split	2.410	32	.022	.0595779	.0092223	.1099334
When Stock Split	-12.734	32	.000	-.4821951	-.5593293	-.4050609
Day t+1 after Stock Split	1.884	32	.069	.0313563	-.0025455	.0652582
Day t+2 after Stock Split	4.239	32	.000	.0542833	.0281981	.0803685
Day t+3 after Stock Split	3.319	32	.002	.0479395	.0184657	.0774133
Day t+4 after Stock Split	2.711	32	.011	.0505515	.0125751	.0885279
Day t+5 after Stock Split	3.231	32	.003	.0428840	.0158524	.0699155

T-Test

Paired Sample Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Abnormal Return Before	.0510352	33	.04439976	.00772901
	Abnormal return After	0454027	33	.03424362	.00596105

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Abnormal Return Before & Abnormal Return After	33	-.411	.017

Paired Samples Test

		Paired Differences					t	df	Sig. (2tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Abnormal Return Before – Abnormal Return After	.0056324	.06629486	.01154045	-.0178747	.0291396	.488	32	.629

T-Test

Paired Sample Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	TVA Before	.0043538	33	.01316817	.00229228
	TVA After	.0054987	33	.00951812	.00165689

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	TVA Before & TVA After	33	.039	.827

Paired Samples Test

		Paired Differences					t	df	Sig. (2tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	TVA Before – TVA After	-.0011449	.01594057	.00277490	-.0067972	.0045074	-.413	32	.683