

THESIS COVER

**THE RELATIONSHIP BETWEEN EARNINGS, STOCK RETURNS,
AND TRADING VOLUME IN MANUFACTURING COMPANY
(LISTED IN INDONESIAN STOCK EXCHANGE FROM 2006-2010)**

A THESIS

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



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DEPARTMENT OF ACCOUNTING
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APPROVAL PAGE

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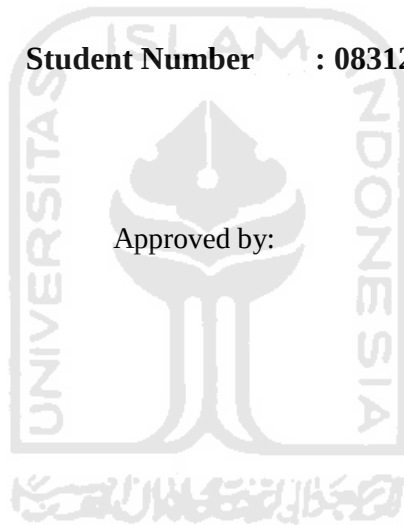
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LEGALIZATION PAGE

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A BACHELOR DEGREE THESIS

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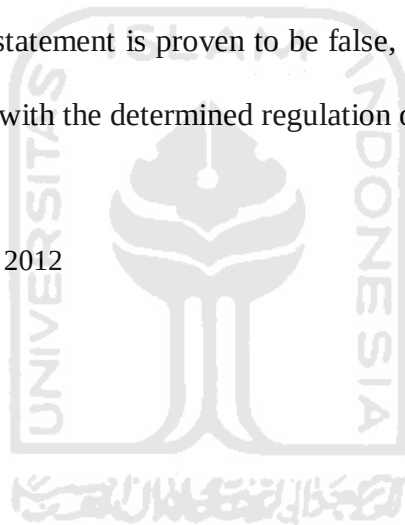
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DECLARATION OF AUTHENTICITY

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

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

Yogyakarta, March 4, 2012



Anastasia Anseli Denta

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Assalamualaikum Wr.Wb

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There are any mistakes in the process of writing this thesis and it is far from perfect. The last but not least, the researcher hopes this research will be helpful to give inspiration in improving the knowledge in the future. Amin.

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Anastasia Anseli Denta

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ABSTRACT

This research analyzes the relationship of earning variables, stock returns, and trading volumes in manufacturing companies in Indonesia. The samples consist of 171 companies listed in Indonesian Stock Exchange during the period of 2006-2010. This study tests four hypotheses related to the relationship among earning variables, stock returns, and trading volumes. Data obtained were analyzed by using multiple regression analysis. The result of this study indicates that: (1) Disaggregated of earnings increases the value relevance in predicting stock returns. (2) Sign of earnings increases the value relevance in predicting stock returns. (3) Both stock returns and trading volumes are stationary. (4) There is a significant relationship between stock return and trading volume.

Key Words:

Disaggregated earnings, sign of earnings, stock returns, trading volumes, manufacturing company



Chapter I

Introduction

1.1 Background

Stock is ownership in a company, with each share of stock representing a tiny piece of ownership. Stock trading actually is just similar to ordinary trading where there are sellers, buyers, bargaining, money, and also goods delivery. But what makes it different is that in stock trading the buyer and seller cannot directly do transaction in the stock exchange office. But they must do trading through stock brokers who work as well as buyers and sellers. This kind of trading is also considered as stock market which helps to mobilize fund from society to some investment sectors. Stock also becomes a kind of way which is used by the company to expand their assets. Company attracts investors to back up the financial of the company through issuing stock to the stock market.

Stock market is a medium for people to buy and sell stock to gain more funds, while stock itself is a kind of an ownership in a company representing the existence of the stockholder to the company. Motivation of a company in issuing stocks to the stock market is to raise money so that the company can expand their corporation, finance the projects, buy more equipment, fix the liabilities, or combination of those.

When investors are deciding to purchase a stock, an evaluation is required in order to determine whether the price of the stock reflects the value of the company or

not. For many years, investors evaluate the condition of the company through the financial report of the company. Therefore, being an educated investor is required to gain the knowledge of reasonably evaluating the stocks. Investors need to make decision whether investing their money to the company or not by analyzing the financial report.

Financial report is a major source of information that is used by investors to assess financial position and performance of a company or entity. Financial reports or generally called as financial statements consist of statement of financial position, statement of comprehensive income, statement of changes in equity and statement of cash flows (Financial Accounting Standard no.1). The information presented in financial statement provides a condition of the entity so that the performance of an entity can be evaluated to fulfill short term liabilities, capital structure, assets distribution, revenue structure, and company expanse. Financial reports incorporate the information of accounting and help investors in determining the amount, time and uncertainty about the earnings expected such as dividend and capital gain. The users of financial report are not only the owners of company but also investors, creditors, employees, financial institution, government, and media. With financial reports, based on what is stated by Hardian Hariono Sinaga (2010) in his thesis, investors and creditors must believe that the financial accounting could become a parameter to evaluate the performance of a company which presents economic condition of the company as well as a better future prospect of economic growth. Basically, those accounting information is needed by the stock investor to make decision.

Two main details which are presented in financial statements are categorized as earnings and cash flows. The success of company's performance is often measured by earnings and cash flows. Accountants have traditionally focused on earnings with emphasis on the realization and matching concepts, such as the statement in SFAC No.1 "information about enterprise earnings and its components measured by accrual accounting generally provides a better indication of enterprise performance than information about current cash receipts and payments" (pars. 44) (Yoon, 2003). That is why the researcher analyzes the impact that might occur due to the changes of earnings in a company rather than cash flow. Stock evaluation involves the examination of the earnings that the company generates for its shareholders. Generally, the earnings represent the profit that the company makes through its activities. These earnings are fixed to a particular period of time.

Earnings determine the operating performance of a company over a period of a time. Management must consider not only the maintenance and preservation of company's resources but also the efficiency of utilization to gain more earning. More earning represents the better performance run by the company. Small companies use this information to calculate the income statement in order to find out what areas of their business are over budget or under budget. Financial statements give the chance to managers to choose the method in the preparation of financial statement to generate high expected earnings. With the high expected earnings, the performance of company is assumed running well, so the investors will be attracted to invest their

funds in that company. Hence, this research is constructed to assess the effect which is caused by earning variables to the stock returns. If we manage to enlighten the causes that drive the return-earnings relation then we will accomplish a great step into creating a less risky decision-making environment.

Leif Atle Beisland (2011) explains in his journal that one of the influencing phenomena in accounting system is value relevance studies as a measurement used by the investors for analyzing the usefulness of accounting information to the stock investor. Some studies suggest that the value relevance of accounting information is lower than expected and several present evidence that value relevance has decreased over the past decades. A value relevance study is evaluation of the relationship between accounting information and capital market values (market values) which represents the existence of stock returns. In practice, value relevance is typically measured as the statistical association between earning variables and stock prices or returns (Khanagha, 2011). In discussing the concept of relevance with regard to accounting information, Riahi-Belkaoui (2000) believes that accounting information is relevant if the information can influence decisions made by decision makers. In this research, the value relevance refers to the statistical association between accounting information and stock returns, where the accounting information is measured through the sign of earnings and disaggregated earnings. Beisland (2010) adds in his journal that the value relevance as measured by explanatory power increases by 109% if earnings are disaggregated into items and the sign of earnings is accounted for in the analysis, compared to a traditional study where aggregate earnings without any

adjustment for the sign of earnings are applied. This study shows that both the sign effect and the aggregation effect are important, and none of them can be disregarded. The empirical findings illustrate that it is useful to account for the sign of earnings for all earnings aggregation levels and vice versa. It is generally useful to disaggregate earnings numbers even if the sign of earnings is taken into account.

In recent years, the development of stock market grows significantly affected by awareness of public to do investment or become investors. This is in accordance to the increasing of people needs which is no longer as a basic necessity. They need an extra income to fulfill their demand in extra needs. Nowadays the extra income gained is now invested to get more income so that the welfare can be maintained. One way to raise money is through the stock market. The company issues a prospectus, which is a sort of advertisement informing people about the prospects of the company and inviting them to invest some money in it. When the company is 'floated' (established) on the stock market, interested investors can become part-owners of the company by buying shares. If the company operates at a profit, shareholders benefit in two ways, through the issuing of dividends in the form of cash or more shares, and through growth in the value of the shares. On the other hand, if the company does not operate at a profit, the shareholders will probably lose money.

The high transaction of investment that happens in stock markets becomes a reason why I discuss this topic in my research. By preparing this research I hope I could increase the understanding of stock investment and gives contribution in economics.

Investment is a commitment of determining the price of one or some investment objects with the expectation of gaining future benefits. There will be two main elements in doing investing; return and risk. Generally, the more it contains risk, the higher the return that can be achieved and the less it contains risk, the lower return that can be achieved (Lastari, 2004). One of many types of attractive investment which has high risk is a stock investment. Basically, the aim of investors in investing their money is to gain return maximally with certain risk. Returns allow investors in comparing actual revenue and or expected revenue at the expected level of return.

The main consideration of the investor in investing their money through stock market is feeling safe and rate of return expected from the investment (Beisland, 2011). This feeling can be gained by obtaining clear information, fair and timely as a basic consideration in making investment decision. Returns enable the investors in comparing actual profit and expected profit provided by various investments at a required return. On the other hand, return has a significant role in determining the value of an investment, this statement was quoted by Achmad Solechan (2009) from Daniati-Suhairi (2006). The ability of investors in analyzing and predicting the condition of stock price and the cash flow in the stock market influences the amount of gain and loss sacrificed.

Stock return is an income earned by the stockholders as a return of their investment in a certain company. In a journal written by Achmad Solechan, it is

stated that according to Jogiyanto (2000) stock return can be distinguished into realized return and expected return. Realized return is a return that has occurred which is calculated based on historical data and this kind of return is used to evaluate the performance of the company and as a base on determining future risk and return. While expected return is a return that is expected to be earned in the future and it is still uncertain. Improved stock returns mean higher profitability of firms and thus overall growth of economy and vice versa (Rehman, 2011).

Stock price and return normally change if there is a change in trading volume which reflects the available set of relevance value to the market (Asghar 2011). Recent research done by Gervais et al (2001) and Kaniel et al (2005) show that stock that experiences high abnormal volume generates higher returns than stocks with low abnormal volume, for a sustained period of time. However, with the rapid development of the Indonesia stock market and the increasing availability of reliable data, more and more researchers have begun to study this market, although little work has been done on the return-volume relationship and such work as exists has employed share-price index data rather than data for individual stocks to examine the return-volume relation.

Company with high frequency of trading results in a significant increase of stock price. That situation occurred because the increase of trading can attract the investors to invest their fund so that the high demand of investment will raise the price of stock up. In the case of low trading volume, the company will assume this

condition as illiquid. On the other hand, if the trading volume is high, the condition is assumed as liquid. Liquidity refers to how easily the stock will get in and out in the market. Jeffrey (2009) quotes from Chordia (2001) at their thesis that stock with more volatile liquidity had lower expected returns.

Returns on stock and trading volume are two main elements in the trading activity on a stock market. These factors contain valuable information about security. The rational of this research is to facilitate investors to understand how stock returns and trading volume affects each other so that they can make the investment decisions accordingly.

Karpoff (1987) seminal paper summarizes the importance of the relation of stock return and trading volume by presenting the following argument. First, the returns or trading volume relation provides insight into the structure of financial markets. Second, the returns or trading volume relation is important for event studies that use a combination of stock returns and trading volume data to draw inferences. Third, the returns or trading volume relation is critical to the debate over the empirical distribution of speculative prices. In dynamic context, the relationship between volatility-volume tests generally supports the Mixture of Distributions Hypothesis (MDH), which helps in improving forecasts of price changes and return volatility.

The relation between stock returns and accounting earnings has been an internationally popular subject of research for many years. Due to the previous

journal of Beisland (2011) about “The effects of earnings variables on stock returns among public companies in Norway” the writer conducts the research to prove that there is an incremental increase of value relevance when earnings are disaggregated and when sign effect is incorporated in the analysis. This research hopefully could extract the full value relevance of the income statement by accounting the earning variables through the sign effect and disaggregated effect.

In this thesis the writer combines the topic of the relation between stock returns and accounting earnings into a relationship with adding variable of trading volume. According to Asghar (2011), trading volume becomes an important part to evaluate the power of stock issued by companies. Trading volumes are also well known to have a big impact on stock market volatility in finance literature. That is why the writer adds the variable of trading volume to this research. Therefore, the writer hopes that this research could analyze whether those theories are able to be implemented in the sample of observation used by the writer in Indonesia. Hopefully, there will be a link between those three variables (earnings variables, stock returns, and trading volume), so that by this research the empirical relationship hopefully can be proved well to be useful for economic fields.

1.2 Problem Identification

The basic problem that the researcher would like to focus is the relationship of earning variables, stock returns, and trading volume. This thesis examines the impact of changing in earning variables that regard sign and disaggregate effect to the value relevance which influences stock returns. If they have relationship, the researcher wants to make further investigation to predict the impact of stock returns to the trading volume.

1.3 Problem Formulation

Based on the main idea and argument from the background above, the researcher proposes a formulating problem such as:

1. Do the published accounting earning variables which regard to sign and disaggregate effect influence value relevance toward the stock returns in the context of Indonesia Stock Market?
2. How is the empirical relationship between the stock returns and the volume of trading in the manufacture company in Indonesia?

1.4 Research Objectives

There were many researches previously done by several researchers to examine the relationship between earning variables and stock returns, and also the relationship between stock returns and trading volume. This thesis has primary objective to examine both relationships whether they are interrelated or not. The researcher wants to observe that in the implementation to the companies, the theory of these variables can be proved whether the independent variable influences the dependent variable or not. The relationship is between published accounting earnings, stock returns, and trading volume in the manufacture companies in Indonesia. The first objective is to investigate the combined effect of accounting for the sign of earnings and disaggregating earnings in value relevance research. The second objective is to understand how stock returns and trading volume affect each other.

1.5 Research Scope

To be more focused, the researcher makes several limitations in the investigations. This research focuses on Indonesian firms with some scope limitations:

1. The companies included in the list of 50 most active IDX members in total trading volume that were listed in BEI data from the period of 2006-2010.

2. The study concentrates on financial statement information especially on the net income before extraordinary items, cash flow, and, stock price April 1.
3. Financial firms are excluded from the data sample
4. This research includes dependent variable and independent variable, which are categorized into two, the first relation that has a dependent variable of stock return and the independent variable of earning variables and the second relation that has trading volume as a dependent variable and the independent variable of stock return.

1.6 Research Purpose

Based on the problem formulation, the purposes of this research are:

1. To predict the combined effect of accounting for the sign of earnings and disaggregating earnings in value relevance towards stock returns
2. To predict the empirical evidence how stock returns and trading volume affect each other.

1.7 Research Contribution

This research is expected to give many contributions to:

1. Investors

The research will give contribution especially in making decision and providing beneficial information in the conduct trades. In addition, this research gives better information to predict some factors that influence the stock return which is invested in Indonesia stock market due to earning variables and the management of profit in predicting the return of stock

2. The companies

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

3. Academicians

The benefit of this research for accounting and financial research is to become motivation for the next reliable researcher. The research can also give some guidance for future researches especially about accounting variables such as sign earnings and disaggregated earnings, stock returns, and trading volume.

4. Researcher

The benefit of this research for the researcher is to gain knowledge about the stock market especially related to earning variables, stock returns and trading volume. The research can also be a tool for the researcher to implement what has been learned during her study in

the university. Besides, this research is done as a requirement to have a bachelor degree.

1.8 Definition of the Terms

The terms used in this study are described as follows:

1. Earnings.

According to D. Nichols and James Wahlen (2004), a firm's earning number is an accrual accounting measure of the firm's profit or loss from business activities and events during a quarter or annual period.

2. Stock Return

Stock return is changing of stock price during the research period (Jogiyanto (2005))

3. Value Relevance

Value relevance can be seen as a measure of accounting usefulness from the perspective of stock investors (Beisland, 2009). In practice, value relevance is typically measured as the statistical association between accounting information and stock prices or returns (Francis and Schipper, 1999)

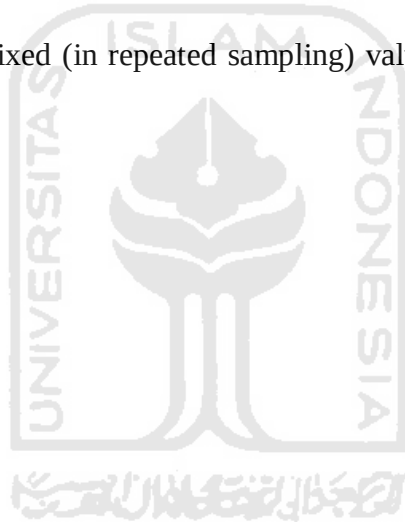
4. Stock Market

Definition of stock market regarding Keputusan Presiden (President Decree) No. 52 year 1976 about stock market states that stock market

is a stock exchange just as stated in UU No. 15 year 1952 (Lembaran Negara Tahun 1952)

5. Regression Analysis

Regression analysis is concerned with the study of the dependence of one variable, the dependent variable, on one or more other variables, the explanatory variables, with a view to estimate and/or predict the (population) mean or average value of the former in terms of the known or fixed (in repeated sampling) values of the latter (Gujarati. 1995:16).



Chapter II

Review of Related Literature

This chapter is mainly discussing the review of related literature which gives many explanations about the relevant theories to this research and to reconsider the previous studies. Some theories are explained in this chapter to confirm accounting variables conveying information about stock return. Parts of this chapter will elaborate more about accounting variables such as earnings, the changing of earnings, stock return, and trading volume to conclude some hypothesis derived from the previous studies and theories and also to verify the impact of firm's specific attribute such as cash flow, aggregate accrual, working capital, deferred tax, and depreciation to those relation between accounting variables and stock return.

2.1 Information of Stock Market

Stock market is an institution which control stock trading in the market. Stock market also serves as an intermediary of parties which is interacted in the stock trading. Stock market becomes a source of funds for companies to meet the necessity of companies. Economic growth is in a line with the development of investment so that the progress of stock market is growing up.

Based on the constitution of stock market no.8 year 1995 “stock market is an activity related with general bargaining and stock trading of public companies which

concern with issued stock also institution and profession related with stock”. In addition, stock market also becomes a financial instrument as a part of system of financial markets. Stock market is assumed as an effective media to attract society in investing funds which are then distributed to productive sectors. By stock market, the investor is expected to invest their money that accord with the risk sacrificed and return expected.

Jogiyanto (2000) in his book *TEORI PORTOFOLIO DAN ANALISIS INVESTASI* classifies stock into 3 main points:

a. Preferred Stock

Preferred stock is a stock with combined attribute between obligation stock and common stock. Similar to obligation which pays interest of the loan, preferred stock also shares profit called preferred dividend. There are some characteristics of preferred stock, such as:

1. Preferred right towards dividend

Preferred right towards dividend means the right to receive dividend earlier rather than common stockholder.

2. Preferred right at the time of liquidation

Preferred right at the time of liquidation means the right of preferred stockholder to receive the company asset earlier rather than common stockholder at the time of liquidation.

b. Common Stock

If a company issues a kind of stock, this stock is categorized as common stock. Stockholder is the owner of the company which deposes toward the management to operate the company. Each stockholder receives a certificate of stock which contains name, address, and stockholder voting rights. As securities, stock contains engagement in which each issue is being guaranteed by laws. In Indonesia, this kind of laws is regulated in limited company law.

c. Treasury Stock

Treasury stock is stocks of a company which have been sold and issued but repurchase the stocks to be kept as a future treasury and can be resold.

Based on Subagyo (1999: 102) as I quoted from the thesis of Sinaga (2010) stock market is a market which managed the trading of securities trading activity, such as stock, obligation, option, warrant, right issue by agent of commissioner and underwriter. Stock market is established for the purpose of assisting, regulating and controlling business of buying, selling and dealing in securities.

According to Manoj Patil (2010), there are some main functions of stock market:

1. Continuous and ready market for securities.

It provides ready outlet for buying and selling of securities. It also acts as an outlet or counter for the sale of listed securities.

2. Facilitate evaluation of securities.

This enables investors to know the true worth of their holdings at any time.

3. Encourage capital formation

It creates the habit of saving, investing, and risk taking among the investing class and converts their savings into profitable investment.

4. Provide safety and security in dealings

The managing body of the exchange keeps control on the members. Fraudulent practices are also checked effectively.

5. Regulate company management

Listed companies have to comply with rules and regulations of concerned stock market and work under the vigilance of stock exchange authorities.

6. Facilitate public borrowing

Stock market serves as a platform for marketing government securities. It enables government to raise public debt easily and quickly.

7. Provide clearing house facility

It settles the transaction among the members quickly and with ease. The members have to pay or receive only the net dues because of the clearing house facility.

8. Facilitate healthy speculation

Healthy speculation keeps the exchange active. Normal speculation provides more business to the exchange.

9. Serve as economic barometer

Stock market indicates the state of health of companies and the national economy so it acts as a barometer of the economic conditions.

2.2 Information of Earnings Variables

Earnings are generally viewed as a basis for analyzing the performance of a company. They also help in indicating whether the company will be able to pay dividends to its shareholders. What is more, earnings denote the possibility of the company to grow by appreciating its capital.

External parties need financial information to make decision related to doing investment, giving credit, and other acts related with the company. This decision making must give more benefits to the company which is aimed to get more profit. Investors, creditors, and other parties use financial statement as a result of accounting process to provide financial information. The financial information will be used by the users of financial statement to make decisions. That is why the users pay more focus on the most relevant information provided. One of the indicators of the company's success is presented as the amount of earnings of that company. Generally, investors will expect benefits from their investment in the form of return, because earnings represent the profit that might be gained. The high earning number shows that the company may give a good benefit for stock holders, while low earning number shows that the company failed to give benefit which is expected by the investors.

According to D. Nichols and James Wahlen (2004), a firm's earning number is an accrual accounting measure of the firm's profit or loss which is gained from business activities and events during a quarter or annual period. A firm's earnings number represents an accounting measure of the change in the value of the firm including the performance of the firm to common equity shareholders during a period of time. He also adds that accounting earnings determined under GAAP may: (1) provide an incomplete measure of firm performance in a given period, or (2) measure performance with a conservative bias.

In this thesis, the earnings variables are regressed due to sign of earnings and disaggregating of earnings. This conclusion holds both as earnings that are split into underlying line items (Ohlson and Penman, 1992) and as earnings that are split into cash flow and accrual items (Barth, Beaver, Hand, and Landsman, 2005). Both the sign effect and the aggregation effect are important, and none of them can be disregarded. Therefore, it is useful to account for the sign of earnings for all earnings aggregation levels and vice versa. It is generally useful to disaggregate earnings number even if the sign of earnings is taken into account.

2.3 Information of Stock Return

Stock return is changing of stock price during the research period (Indriyana and Jogiyanto, 2005). Investors are motivated to do investment with expectation of gaining high return of investment. Without return of an investment, investors will not invest their money. In other words, investment --whether it is short term or long term-- has an aim of gaining return.

Sinaga (2010) in his thesis explained that return has two basic components, current income and capital gain. The first one is current income which is a return or profit gained from periodic payment systems such as interest payments of deposits, interest of bonds, dividend, etc. This return is classified as current because the return received is generally in cash, so it has high liquidity, such as rate / giro services and cash dividends (dividen tunai). The second component is capital gain which is a

return or profit gained because there is a difference between selling price and buying price of share from an investment. Capital gain relies on market price of the instrument of investment which means that investment's instrument must be traded in the market. By trading, there will be change in the value on investment's instrument which will result in capital gain. The value of capital gain is measured based on the analysis of previous historical return, so the value of expected return can be determined.

Return can be in the form of expected return and also realized return. Expected return is a return which is expected to be received in the future, while realized return is a return which has occurred and calculated based on historical data. Returns enable the investors in comparing actual profit and expected profit provided by various investments at a required return. On the other hand, return has a significant role in determining the value of an investment, this statement was quoted by Achmad Solechan (2009) from Daniati and Suhairi (2006).

Easton and Harris (1991) show that stock returns may theoretically be seen as a function of both the level and the change in earnings.

The first step was to calculate the stock returns and Microsoft excel was used to calculate all the daily returns of stock prices. It was calculated through;

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

Where:

$$P_t = \text{Stock Price of firm } i \text{ in year } t$$

P_{t-1} = Stock Price of firm i in year $t-1$

R_{it} = Returns _{it} are accumulated during the 12-month period covering trading days.

In this research, the researcher takes stock price at April 1 at each year.

2.4 Information of Trading Volume

Volume is simply defined as the number of shares or contracts that trade over a given period of time, usually in the period of a day. The higher the volume of trading results in the more active the security can be. Trading volume includes the number of shares, bonds or contracts in a given period for an entire exchange among parties. The stocks with large trading volume attract the investor to buy and do investment. Asghar (2011) states that stock prices and returns normally change if there is change in trading volume. Just like return, trading volume reflects the available set of relevant information to the market. It is evident from the past research that investor's expectations always lead to an increase in trading volume, which therefore reflect the sum of investor's reactions to news (Medeirosl & Doornik, 2000). Asghar also explains that trading volume captures the important information which is contained in the quality of the trader's information signals and can be useful in interpreting information contained in prices. Growth or decline of a particular contract can be predicted by analyzing the trading volume's information presented in

an entity. It can also measure shifts in the composition of future markets as can be illustrated by the enormous growth of financial futures compared.

Trading volume represents the power of supply and demand which serves as a manifestation of investor's action. By an increase of trading volume, the condition of market is assumed as strengthened, vice versa (Ang, 1997)

Trading volume is an important aspect of technical analysis because it is used to confirm trends. Any price movement up or down with relatively high volume is seen as a stronger, more relevant move than a similar move with weak volume.

2.5 The Relationship between earnings and stock returns

According to Nichols and Wahlen (2004), there are four factors that could help describing the relationship between earnings and stock returns. Information is from their journal of "How do Earnings Numbers Relate to Stock Returns?" which relies on Beaver (1998). The first factor describes some theories underlying the relation between earning and stock return. He said that the theory links to the three assumptions about the information contained in earnings and stock prices. The first theory assumes that earning or generally called as financial reporting provides some information to equity shareholders that can be used to form current and expected future probability. The second theory assumes that current and expected future probability provides shareholders with information about the firm's current and expected future dividends. The third theory assumes that share price equals the

present value of expected future dividends to the shareholders. The relation occurs in those links which can be explained as the following explanation. The equity shareholders summarized important information from the current period earnings numbers which reflect the wealth of the company. The result is used to predict the expected future earnings. In fact, company really depends on the financial reporting to evaluate the performance of the company so that the company can generate future wealth for equity shareholders and other stockholders. This wealth created by the firm will ultimately be distributed to the equity shareholders through dividend. The current and future earnings indicate the ability of paying the future dividends which is used by shareholders to develop expectations of future dividends. The present value of all expected future dividends reflect the current share price. That is why we can conclude that earnings influence the stock return.

The second factor of the relation between earnings and stock returns is the new information communicated by earnings (the unexpected earnings). The earnings that the market expects to occur in this period should be alleviated to isolate the new information in earnings.

The third factor is about market efficiency. It refers to the scope of the information that is reflected by price of the stocks and its degree to which capital market prices react quickly and completely to the new value-relevant information. Market efficiency is a matter of degree which describes how much information can be

reflected by price of the stocks and how quickly prices react to the new equilibrium levels.

The forth factor is about asset pricing models in financial economics that is used to predict that risky securities, such as shares of stock, and should provide a sufficient rate of return to compensate the securities holders for forgoing consumption and bearing risk.

2.6 The Relationship between Stock Return and Trading Volume

Asghar (2011) stated that stock prices and returns normally change if there is change in trading volume. Investors take a look at the return issued by the company. If the returns of stock are high, the investors will be attracted to buy more shares from that company. Therefore, it results in the increase of trading volume of stocks.

DeLong, Shleifer, Summers, and Waldmann (1990) developed a model showing a positive correlation of stock returns at shorter horizons when “positive feedback traders” respond to past price that is increased by entering the market and thus create higher trading volume. Pyun Lee and Nam (2000) provide positive evidence from the Korean stock market which results in a positive and contemporaneous relationship between volume and absolute return. Also Karpoff (1987) seminal paper summarizes the importance of the relation of stock return and trading volume by presenting the following argument. First, the returns or trading volume relation provides insight into the structure of financial markets. Second, the

returns or trading volume relation is important for event studies that use a combination of stock returns and trading volume data to draw inferences. Third, the returns or trading volume relation is critical to the debate over the empirical distribution of speculative prices. In dynamic context, the relationship between volatility-volume tests generally supports the Mixture of Distributions Hypothesis (MDH), which helps in improving forecasts of price changes and return volatility.

2.7 Research Model

Research model in this chapter presents the information that can be gained by investors in predicting the return of stock by analyzing the information related to the earning variables and how they interact each other. Investors are also able to predict the trading volume changes due to the changes of stock return in the market.

Based on those analyses, the writer builds a picture in term of conceptual framework to make the reader easier in understanding this discussion, as seen below:

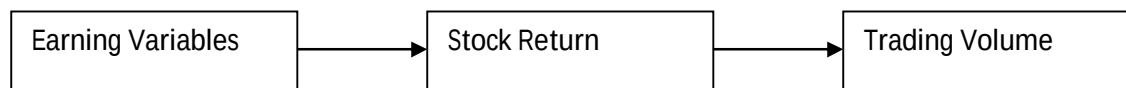


Figure 2.7.1

2.8 Hypothesis

Hypothesis is tentative answer towards problem formulation in which the validity is still doubtful, so it needs to be evaluated empirically. The research hypothesis is a paring down of the problem into something testable and falsifiable. A

hypothesis must be testable, taking into account the current knowledge and techniques, and be realistic. A hypothesis must be verifiable by statistical and analytical means, to allow a verification or falsification. Therefore, it is better to solve the problem which is translated into hypothesis to result in a verified theory. In this research the researcher runs three hypothesis to be tested which is explained in the following:

2.8.1 Earnings Hypothesis

SFAC No.1 states that “information about enterprise earnings and its components measured by accrual accounting generally provides a better indication of enterprise performance than information about current cash receipts and payments” (pars. 44).

Earnings determine the operating performance of a company over a period of a time. Theoretically, more earning represents the better performance run by the company. The more earnings resulted by a company influence the higher interest of investors to invest their money in that company. Consequently, it also leads to higher value of expected stock return. In contrast, the lower amount of earnings gained by company will result in the lower interest of investors to invest their money in that company, so the value of expected stock return will also decrease.

Stock returns and earning variables are studied by the large number of researchers and there is enough evidence to support their relationship. Leif Atle

Beisland (2011) did a research which is explained in his journal of *The Effects of Earnings Variables on Stock Returns among Public Companies in Norway: A Multiple Regression Analysis*. The journal mainly discussed about the relationship between earnings variables and stock returns. The earning variables consist of two effects which are disaggregation of earnings and sign of earnings. He runs two regression analyses to convince the truth of the theory. The result shows that one has to account for the sign of earnings and disaggregate earnings into items to extract the “full” value relevance of the income statement. The two effects are incremental to each other: value relevance increases substantially if the sign effect is incorporated in the analysis even if earnings have already been disaggregated. Conversely, there is a significant increase in value relevance when earnings are disaggregated even if the sign of earnings has already been taken into account in the regression analysis.

Nichols and Wahlen (2004) did a research about the relation between earnings and stock returns. In this research, he described three theoretical links developed by Beaver (1998). The first link assumes that current period earnings summarizes important information useful for forecasting future earnings, the second one is forecast of future earnings provide important inputs in developing dividend expectations. The third is the preset value of expected future dividends that determines share price. These three links are used to understand more about the value relevance of earnings and also to analyze the valuation implications in earnings information. Then the empirical evidence of this research shows us that (1) the magnitudes of the earnings changes also contain important information and that

annual changes in cash flow from operations have a significant but weaker relation with annual stock returns relative to the earnings-returns relation. (2) Returns associated with earnings increases are significantly greater for high persistence firms, whereas returns associated with earnings decreases do not differ across high and low persistence firms. (3) Share prices react rapidly to the arrival of new information in quarterly earnings.

Dimitropoulos, Asteriou, and Koumanakos (2009) in his research stated that if we manage to enlighten the causes that drive the return and earnings relation then we will have accomplished a great step into creating a less risky decision making environment. He mainly did research about the association between published accounting earnings and stock returns, in the context of the Hellenic Capital Market using four model specifications; the price, return, differenced (changes) and deflated models. The results demonstrated a significant and positive response between earnings and stock return. The value relevancy of accounting earnings is prepared under the Greek GAAP. Specifically in the Greek Stock market the price model produces less biased ERC's than the return model but suffers from various problems. Also, the use of cross-sectional and time series aggregated data results in a large increase in the explanatory power of earnings for returns yielding more significant earnings response coefficients. Easton and Harris (1991) examine whether the level of earnings scaled by price at the beginning of the stock period is relevant for evaluating earnings- return association. Strong (1993), in Linda and Syam (2005), shows that there is a significant relationship between stock return and earning

changes. Beisland (2011) in his Journal conclude that the two effects are incremental to each other: value relevance increases substantially if the sign effect is incorporated in the analysis even if earnings have already been disaggregated. On the contrary, there is a significant increase in value relevance when earnings are disaggregated even if the sign of earnings has already been taken into account in the regression analysis.

In this observation the relationship between earnings variables and stock returns is regarding two effects of earning variables which are disaggregating of earning and sign of earnings, where the value relevance represents the impact toward stock returns. Based on that theories and assumption, the writer concludes a hypothesis as:

H₁: There will be an increasing in the value relevance of earnings if disaggregated effect is incorporated in predicting stock returns

H₂: There will be an increasing in the value relevance of earnings if the sign effect is incorporated in predicting stock returns

2.8.2 Stock Returns Hypothesis

Stock return is changing of stock price during the research period (Indriyana and Jogiyanto (2005). Stock returns influence the volume of trading in companies. When there is an increase of stock returns, there will also be an increase of trading

volume. This is due to the fact that if the returns of stock are high, the investors will be attracted to buy more shares from that company in the market so that it results in also an increase of volume of stocks traded in the market. In contrast, if the stock returns are low, the investors will not get attracted to invest their money to that company so they will not buy the stock issued by the company in the market. It results in the decrease volume of stocks traded in the market. Past researcher DeLong, Shleifer, Summers, and Waldmann (1990) in their research of “Positive feedback investment strategies and destabilizing rational speculation” developed a model resulting a positive correlation of stock returns at shorter horizons when “positive feedback traders” respond to past price increases by entering the market and thus create higher trading volume. The other research is done by Deo, Srinivasan, and Devanadhen (2008) about “The Empirical Relationship between Stock Returns, Trading Volume and Volatility: Evidence from Select Asia-Pacific Stock Market” with the results suggesting that the returns are influenced by volume and volume is influenced by returns for most of the markets. Therefore, trading volume contributes some information to the return and volatility for determining contemporaneous and lagged volume effect after incorporation.

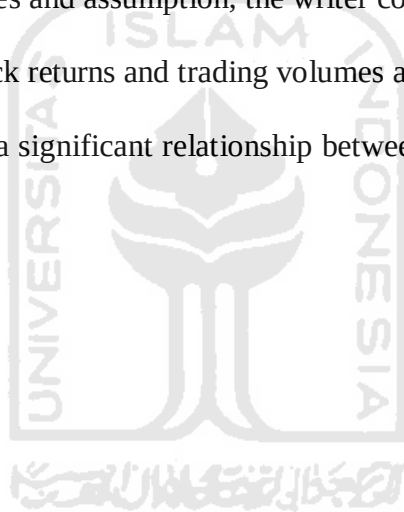
Nadia Asghar (2011) did a research which is explained in her journal of The Empirical Relationship between Stock Returns and Trading Volume in Pakistan. This journal shows that there is an empirical relationship between stock returns and trading volume in Pakistan. As we know that trading volume may capture the important

information contained in the traders information signal and may be useful in interpreting information contained in prices. Accordingly, that trading volume has a high influence to the stock price in the investment. Based on the analysis it is concluded that there was an overall positive relationship between stock returns and trading volumes and vice versa. Evidence shows that movement of stock returns may affect the movements of trading volume and vice versa.

Based on that theories and assumption, the writer concludes a hypothesis as:

H₃: Both stock returns and trading volumes are stationary

H₄: There is a significant relationship between stock return and trading volume.



Chapter III

Research Method

This chapter is aimed at giving a view of the research conducted by the researcher. This research tries to confirm whether there is an empirical relationship between earning variables and stock returns in Indonesia and if there is a relationship, the researcher will continue to analyze whether there is an empirical relationship between stock returns and trading volume in Indonesia.

This research is a descriptive case study. It gives a description about the problem and situation of research subject. In general, to make description of the problem, the researcher conducts certain procedures from data collection to data analysis before making conclusions.

3.1 Research Subject

The subject of this research is analyzing whether the first accounting variables (earnings variables) can give information in explaining stock return and the second accounting variables (stock returns) can give information in explaining trading volume. The population for this research is limited only to companies which are listed in BEI as the 50 most active stock members by trading volume in Indonesia. The researcher uses the firms based on the volume of trading because they have a tendency to have a significant amount of transaction which influences the result of

calculating. It is also because the researcher wants to analyze the relationship between trading volume and stock returns so that by analyzing the 50 active members in trading volume, the researcher expects to get the significant value. Therefore, the fluctuation of their activities can be predicted well.

3.2 Types of Data

The type of data used in this research is a secondary data. Secondary data are data which are collected indirectly from intermediary media (recorded and collected from third parties). Those data are collected from an institution or other resources by looking at the literature review which has a correlation with the problems that are discussed in this research. The data needed in this research are: stock price, net income before extraordinary items, cash flows, and accruals in the end of accounting period within the periods of 2006 to 2010 from the Indonesia Capital Market Directory (ICMD), Indonesia Stock Exchange Faculty of Economy, Islamic University of Indonesia; journal, references book, and others literature related with the topic of research.

3.3 Method of Data Collection

The method to collect samples in this research is purposive sampling. Purposive sampling is a technique to collect the sample based on certain criteria that is in accordance with the purpose of research (Kuncoro, 2003). The data were collected through journals from the previous researchers and financial reports, which were published to get the abstraction of the related problems, and also from the secondary data that were published in Indonesia Stock Exchange.

3.4 Population and Sample

Regarding J. Supranto (statistic, 2000: 21), population is a collection of all similar elements but indistinguishable among each other. Based on the definition, in this research population stands for manufacture companies which record their stocks in BEI period of 2006, 2007, 2008, 2009, and 2010.

Sample is a way collecting data which will be analyzed. In this research, the samples were manufacture companies providing financial reports on December 31 for the year 2006, 2007, 2008, 2009, and 2010. The election of sample of manufacture companies was based on some criteria, such as:

1. The companies included in the list of 50 most active IDX members in the total trading volume that were listed in BEI data from the period of 2006-2010.

2. The study concentrates on financial statement information especially on the income before extraordinary items (operation cost), cash flow from operation, accrual, and stock price on April 1 within the periods 2006 to 2010 which were obtained from BEI.
3. Financial firms are excluded from the data sample.
4. This research includes dependent variable and independent variable, which are categorized into two, the first relation that has a dependent variable of stock return and the independent variable of earning variables and the second relation that has trading volume as a dependent variable and the independent variable of stock return.

3.5 Research Variables

The research uses two variables, independent variables and dependent variables. For the first research analysis, the independent variable consists of earning variables. Earnings which are used in this research are the published accounting earnings variables which regard to sign and disaggregate effect. When the earnings are disaggregated, the variable of earnings is split into components of cash flow and accrual. Otherwise, when the earnings are incorporated with sign effect, the earnings will be separated through negative and positive values. The calculation of earnings is based on the cost of operation of the company or called net income before extraordinary items. This measurement is based on the research done by Easton and

Harris (1991) which is quoted by Leif Atle Beisland (International Journal of Management, 28, 773-783, 2011). In this analysis, the regression models show the dependent variable as a stock return (RET). RET is stock return for company i in year t. The stock return is calculated using holding period return (George Yungehih Wang, 2010)

The Stock Return is formulated as:

$$R_{it} = (P_t - P_{t-1}) / P_{t-1} \quad (3.1)$$

Where:

P_t = Stock Price of firm i in year t

P_{t-1} = Stock Price of firm i in year t-1

R_{it} = Returns_{it} are accumulated during the 12-month period covering trading days.

Then for the second research analysis, the independent variable is stock returns. The dependent variable is a trading volume which requires two steps of testing. For testing the stationary of the data, correlogram and Augmented Dickey fuller models are applied. In addition, by using the vector auto regression model, the relationship and significance are evaluated between stock returns and trading volumes.

3.6 Research Procedures

3.6.1 Data Collection

Those data was collected from an institution or other resources by looking at the literature review which has a correlation with the problem discussed in this research. The data needed in this research are: stock price on April 1, net earnings before extraordinary items, cash flow of operation, and accrual in the end of accounting period within the periods 2006 to 2010 which were collected from BEI.

3.6.2 Data Reclassification

After collecting the data, the researcher made data classification according to the independent or dependent variables. The earnings variables in this research regard to sign and disaggregate effect.

3.6.3 Data Analysis

3.6.3.1 Descriptive Statistics

Descriptive statistics is used to analyze clarity level of earnings variables, cash flows, and accruals of companies stated in BEI. The analysis runs two panels. Panel A is distributional characteristics which displays the mean, standard deviation, and number of observations for the positive and negative earnings sample, respectively. Panel B lists correlation coefficients for the positive (negative) earnings sample.

3.6.3.2 Value Relevance Study

This analysis is used to analyze and test the validity of regression models used in this research. It shows the regression coefficients, t-values, and explanatory power for the years 2006 to 2010. The data are analyzed using the following regression specification (Easton & Harris, 1991):

- **Aggregate Effect**

$$\checkmark \quad RET_{i,t} = \beta_0 + \beta_1 EARN_{i,t} + \beta_2 \Delta EARN_{i,t} + \varepsilon_{i,t} \quad (3.2)$$

- **Disaggregated Effect**

$$\checkmark \quad RET_{i,t} = \beta_0 + \beta_1 CF_{i,t} + \beta_2 \Delta CF_{i,t} + \beta_3 ACC_{i,t} + \beta_4 \Delta ACC_{i,t} + \varepsilon_{i,t} \quad (3.3)$$

- **Sign Effect**

$$\checkmark \quad RET_{i,t} = \beta_0 + \beta_5 D_{i,t} + \beta_6 EARN_{i,t} + \beta_7 \Delta EARN_{i,t} + \beta_8 EARN_{i,t} D_{i,t} + \beta_9 \Delta EARN_{i,t} D_{i,t} + \varepsilon_{i,t} \quad (3.4)$$

$$\checkmark \quad RET_{i,t} = \beta_0 + \beta_5 D_{i,t} + \beta_6 CF_{i,t} + \beta_7 \Delta CF_{i,t} + \beta_8 CF_{i,t} D_{i,t} + \beta_9 \Delta CF_{i,t} D_{i,t} + \beta_{10} ACC_{i,t} + \beta_{11} \Delta ACC_{i,t} + \beta_{12} ACC_{i,t} D_{i,t} + \beta_{13} \Delta ACC_{i,t} D_{i,t} + \varepsilon_{i,t} \quad (3.5)$$

Where:

$RET_{i,t}$ = Stock return for company i in year t

EARN = Net earnings before extraordinary items

CF = Total cash flows

ACC = Total accruals

β_0 = Intercept

Δ = Denotes yearly change in the variables

β_i = Coefficient of regression for each independent variable

$\varepsilon_{i,t}$ = Error

3.6.3.3 The True Value Relevance of Earnings

This analysis shows the value relevance of earnings for a sample of Indonesia firms listed in BEI from 2006 to 2010. Value relevance is measured as the explanatory power, the mean adjusted R^2 , from the annual regression analyses. The value of adj. R^2 is used to compare the value relevance if the effect of disaggregation of earnings and sign of earnings are incorporated into the account.

3.6.3.4 Augmented Dickey fuller models

These models are used to test the stationary of the data of stock returns and trading volume in order to be continued to VAR model.

3.6.3.5 Vector Auto Regression model

This model is used to evaluate the relationship and significance between stock returns and trading volumes.

3.7 Hypothesis Testing

Empirical findings are assumed as statistically significant if the value of empirical findings are in the critical area (H_0 rejected). In contrast, it is assumed not to be significant if the value of empirical findings is in the area where H_0 is not rejected.

The test of hypothesis will use the E-Views program to make calculation easier rather than do it manually. Furthermore, by using the program of E-views in data processing, the data can be processed in shorter time and the result is more accurate than using the manual program.

The equations (3.3) are applied to test the H_1 . Coefficient of β_0 is an intercept or constantan. Coefficient β_1 , β_2 , β_3 , and β_4 show the total response when the earnings are disaggregated into cash flows and accruals in predicting stock returns. As with the hypothesis H_1 , it is expected that the value of β_1 , β_2 , β_3 , and β_4 are not equal to zero which means all earnings variables have the same ability in predicting stock returns. Thus, the researcher tested the hypothesis based on:

$$H_{01} : \beta_1 = 0; \quad \beta_2 = 0; \quad \beta_3 = 0; \quad \beta_4 = 0$$

It means that there is significant deceasing value relevance of earnings variables if disaggregated effect is incorporated in predicting stock returns

$$H_1 : \text{at least } \beta_i \neq 0$$

Where $i = 1 \dots 4$

It means that there is significant increasing value relevance of earnings variables if disaggregated effect is incorporated in predicting stock returns.

In testing the second hypothesis H_2 “There is an increase in value relevance if the sign of earnings is incorporated in predicting stock returns”, the researcher input the dummy variable into the regression model (3.4) and (3.5).

Dummy variable is equal to 1 if earnings are negative, zero otherwise. The population sample is separated into 2 categories, positive earnings sample and negative earnings sample. Coefficient β_0 is an intercept or constantan. Coefficient β_5 shows the total response of dummy variable incorporated to the regression. When the β DM equals to zero, it means that the negative earnings sample has same ability with positive earnings sample in predicting stock returns. Then, coefficient of β_8 , β_9 , β_{12} , and β_{13} shows the total response when the dummy variable is combined with each independent variable in predicting stock returns. From those definitions of coefficient, the hypothesis of this relationship is as follows:

$$H_{02} : \beta_5 = 0$$

It means that there is significant decrease in the value relevance if the sign of earnings is incorporated in predicting stock returns

$$H_2 : \beta_5 \neq 0$$

It means that there is significant increase in the value relevance if the sign of earnings is incorporated in predicting stock returns

The next hypothesis is to study the relation between stock returns and the trading volume. The data were required to be checked for stationary before using

vector auto regression model. For this purpose, autocorrelation and unit root test were used to check the stationarity of trading volume. Hypothesis is formed:

H_{03} : Both stock returns and trading volumes are not stationary

H_3 : Both stock returns and trading volumes are stationary

Acceptance hypothesis criteria:

H_{03} is accepted if $P = 1$, means that it is not stationary

H_3 is accepted if $P < 1$, means that it is stationary

For measuring the relationship and significance of stock returns with trading volumes, the VAR (Vector Auto Regression) model is applied. Hypothesis is formed:

H_{04} : There is a negative relationship between stock returns and trading volume

H_4 : There is a positive relationship between stock returns and trading volumes

Acceptance hypothesis criteria:

H_{04} is accepted if $b = 0$, means that it is significant relationship

H_4 is accepted if $b \neq 0$, means that it is significant relationship

CHAPTER IV

RESEARCH FINDINGS, DISCUSSION, AND IMPLICATIONS

In this chapter, the writer will discuss about the analysis of the data after all of the data were collected. Based on the theory, the discussion about the data analysis refers to the main problem and the hypothesis formulations which have already been mentioned in the second chapter. The result of data processing will be used as an indicator whether the hypothesis will be accepted or rejected.

This research aims to analyze the relevancy between accounting information toward stock returns of companies and analyze the relation between stock returns and trading volume in the manufacture companies which are listed in Bursa Efek Indonesia.

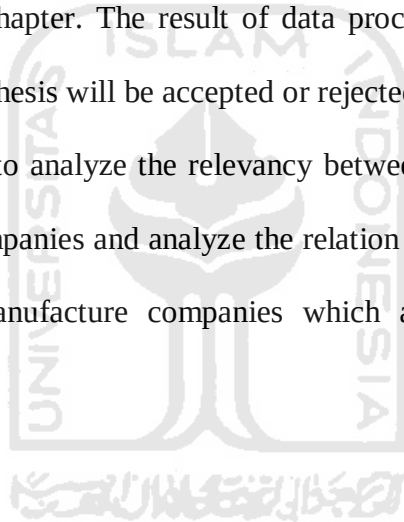


Table 4.1**Data Collection Result**

Notes	Number of Companies
Companies included in the list of 50 most active IDX members in total trading volume (2006-2010)	250
Financial firms	54
Incomplete financial statement information	25
Appropriate companies	171

Source: Data Processed

4.1 Research Description

The research analyzes two relations; the first is the relation of earning variables to the stock returns and the second is the relation of stock return and trading volume. The descriptive value for the first relation of the independent variable is earning variables which regards to sign effect and disaggregate effect, and the dependent variable is stock returns of manufacturing companies listed in Indonesia Stock Exchange 2006-2010. In this research, the researcher tries to recover the

general assumption that earning variables have a relevancy with sign and/or disaggregate effect in predicting stock returns. Earnings are an accounting measure of a firm's profit or loss from business activities and events during a period of time (D. Nichols, 2004). Financial statement will provide the accounting information of earnings earned by the firms which will explicitly present the condition of firms. This accounting information has the role in describing the value relevance towards the stock returns. Informational content of earnings is sign dependent (Plesko, 2005). The return-earnings association is not constant across earnings levels, so this research analyzes the relation of return-earnings if sign dependent earnings response coefficients are applied in the empirical analyses. Empirical studies have also documented that the value relevance of earnings may increase substantially as earnings are disaggregated into components. Earning variables might regard to sign effect which differentiates earning variables into positive earnings and negative earnings. The analysis continues with disaggregate the earnings into components which are differentiated into earnings number and its first difference. Both the earnings number and its first difference may theoretically be seen as significantly related to stock return (Francis, et al., 2003). In order to prove that disaggregate effect may significantly related to return-earnings, the researcher adds with disaggregating earnings into cash flows and accruals.

Stock return is an income which is earned by the stockholders as a return of their investment in a certain company. Improved stock returns mean higher

profitability of firms and thus overall growth of economy and vice versa (Rehman, 2011). The main aim of investors in investing their fund is to receive high profit or stock returns. The higher returns which are earned by investors will result in the more attractive the stocks can be. In this research, the researcher took stock price on April 1 each year or 3 months after the listed year.

Trading volume is a number of stocks which are traded in the stock market in a period of time, usually in the period of a day. Asghar (2011) states that stock prices and returns normally change if there is a change in trading volume. So that, the higher the volume of stocks traded in the market, the more active the security can be.

4.2 Research Findings

4.2.1 Descriptive Statistics

Descriptive analyses will describe the characteristics of sample used in this research based on mean and standard deviation. The result of descriptive analysis can be seen in this table:

Table 4.2
Distributional Characteristics

	Positive Earning (N=142)		Negative Earning (N=29)	
	Mean	St. Dev	Mean	St. Dev
EARN	0.244	0.633	-1.274	3.012
CH_EARN	0.271	0.722	0.004	0.700
CF	0.229	0.706	0.241	0.544
CH_CF	0.026	0.218	-0.033	0.280
ACC	-0.007	0.775	1.515	3.308
CH_ACC	-0.072	0.597	0.018	0.591
RETURN	0.403	0.911	-0.144	0.669

Source: Secondary data analyzed, 2012

Table 4.1 shows the result of descriptive statistics from all variables which are used in this research. Those variables are used to show the value relevance of accounting information. The result of descriptive statistics shows that the group of sample data with positive earning has mean of 0,244 which means the amount of earnings equals to 22.4% of the starting value of equity, while the mean in the negative earnings sample is -1,274 which means that the company has loss of 127,4% of the starting value equity. Whereas, the change in earnings in the positive earning sample equals to 27,1% , which is higher than the change of earnings in the negative earning sample (only 0,4%).

The mean of cash flow in the positive earning sample equals to 22,9%, the change of cash flow equals to 2,6%, accrual equals to -0,7%, and the change of accrual equals to -7,2%. While the mean of cash flow in the negative earning sample equals to 24,1%, the change of cash flow equals to -3,3%, accrual equals to 151,5%, the change of accrual equals to 1,8%. The value of cash flow in positive earning sample shows that companies get more cash inflows such as cash from customers, interest, dividend, and suppliers.

The result of descriptive statistics for stock returns shows the mean of positive earning sample equals to 40,3% and -14,4% for negative earning sample. Not surprisingly, positive earning companies have a much larger stock returns than negative earnings companies.

4.2.2 Correlation Statistics

Correlation statistics shows the correlation coefficients between the accounting information and stock returns. Thus, if the independent variables have a tight correlation among each other, they are not independent anymore (Tan et al, 2007). The result of correlation statistics is shown in this table:

Table 4.3
Pearson Correlation Matrix

	RETURN	EARN	CH_EARN	CF	CH_CF	ACC	CH_ACC
Negative Earning Sample (N=29)							
RETURN	1.000						
EARN	0.239	1.000					
CH_EARN	0.408*	0.164	1.000				
CF	0.287	-0.481*	0.202	1.000			
CH_CF	0.064	0.082	0.504*	0.403*	1.000		
ACC	-0.170	-0.990*	-0.116	0.603*	-0.008	1.000	
CH_ACC	-0.058	-0.151	-0.795*	0.191	-0.140	0.169	1.000
Positive Earning Sample (N=142)							
RETURN	1.000						
EARN	0.473*	1.000					
CH_EARN	0.707*	0.450*	1.000				
CF	0.214*	0.326*	0.216*	1.000			
CH_CF	-0.023	-0.114	-0.004	0.494*	1.000		
ACC	-0.166*	-0.509*	-0.149*	0.641*	0.544*	1.000	
CH_ACC	-0.130	-0.328*	-0.167*	0.189*	0.442*	0.442*	1.000

* (Statistical significance at a 5% level)

This result of pearson correlation matrix shows that all components of accounting information (EARN, CH_EARN, CF, CH_CH, ACC, and CH_ACC) in the positive earning sample are related significantly with stock return. This result is

different from the correlation coefficients of the components of accounting information in the negative earning sample which show that only the variable of change in earning has a significant correlation with stock returns. The result proves that separating earnings between positive and negative earning causes a difference to the correlation coefficient between the variables applied. For the companies with positive earnings, the correlation between earnings and returns ($\rho = 0.473$, $p = 0.000$) is higher than the correlation between cash flows and returns ($\rho = 0.214$, $p = 0.000$) and is also higher than correlation between accruals and returns ($\rho = -0.166$, $p = 0.000$). It indicates that the relevance between stock returns and earnings is higher rather than with cash flows and accruals.

Companies which are included in positive earning sample have a higher correlation between stock returns and the accounting variables than companies in the negative earning sample. However, in the negative earnings sample, there seems to be low correlations between stock returns and accounting variables. Total earnings, total cash flows, and total accruals appear to be unrelated to the stock returns in the negative earnings sample. Accruals are negatively correlated with stock returns in positive earnings sample with the value equals to -0.166.

4.2.3 Linier Regression Analysis

Linier Regression analysis is applied in some models of regression analysis, which are Value Relevance Study and model Dummy for Negative Earning. The first analysis started from the first model of Easton and Harris (1991) regression of total

sample (without separating the dummy for negative earning) or equation 3.1. In the table 4.3, only earning variables and change of earning variable are regressed with stock return. The model of aggregate earning effect can be shown as:

Table 4.4
Regression Model for Aggregate Earnings

Variable	Coef. β	t-stat.	Prob	R2	f-stat.
EARN	0.092	2.609	0.010	47,73%	76.7
CHEARN	0.787	10.96	0.000		
C	0.134	2.555	0.011		

Source: Secondary Data Analyzed, 2012

Table 4.3 shows that earning variable and change of earning variable significantly influence the stock returns in the sample of 171 companies during 5 years period of time. This can be proven by the probability level <0.05 . By the first equation (3.1), the result from table 4.3 shows that earnings and changes of earnings have a relevance value because each coefficient shows positive value and significant ($\beta_1 = 0.092$, $p = 0.010$; $\beta_2 = 0.787$, $p = 0.000$). The earning and change of earning is proven significantly relevant toward stock returns with the probability value equals to $0.010 < 0.05$ and $0.000 < 0.05$ respectively. Positive value means that the increase in independent variables will result in an increase in dependent variable.

In table 4.3, the earning variables and change of earnings explain 47,73% of the variation in stock return, and the rest of 52,3% is explained by the other variables of accounting information.

The result of regression statistics of disaggregated earnings which are presented into cash flow and accrual can be shown as:

Table 4.5
Regression Model for Disaggregated Earnings

Variable	Coef. β	t-stat.	Prob	R2	f-stat.
CF	0.745	6.084	0.000	22,74%	12.2
CHCF	-0.125	-0.348	0.728		
ACC	-0.631	-5.618	0.000		
CHACC	0.498	3.930	0.000		
C	0.174	2.601	0.010		

Source: Secondary Data Analyzed, 2012

The result of testing the first hypothesis H_1 is shown in table 4.4. The test was done by the sample of 171 companies during 5 years period of time. In this test, the earning variables were disaggregated into two components; cash flows, accruals, and its differences. The result of the equation (3.3) presents that the coefficient of CHCF (changes of cash flows) and ACC (accruals) shows negative value which means the

increasing value of independent variables will result in the decreasing value of stock returns. The value of probability of CHCF equals to 0.728 which is greater than 0.05 and it means there is no significant relationship between changes of cash flows and stock returns. The coefficient ACC shows a negative value ($\beta = -0.631$, $p = 0.000$) meaning that the increasing value of accrual will result also in the decreasing value of stock returns significantly. The coefficient CF shows positive and significant relationship ($\beta = 0.745$, $p = 0.000$) which means the increase of cash flows will result in the increase of stock returns significantly. This relation is consistent with Barth et al (1999) who states that between cash flows and accruals is “mirror images”, which means if the coefficient of cash flows is valued positive and significant, it is expected that the coefficient accrual is valued negative and significant.

These results indicate that the disaggregation of earnings into components of cash flows and accruals significantly influence the value relevance in predicting stock returns due to the result that all of the variables are not equal to zero. This result matches with the previous research of Ali & Lee-Seok (2000), Ball, et al (2000), and Beisland (2011) which stated that the value relevance of earnings may increase substantially as earnings are disaggregated into components.

The value of R^2 equals to 22,74%, which means that earning components of cash flow, change of cash flow, accrual, and change of accrual can explain stock returns that equals to 22,74% and the rest of 77,26% is explained by the other variables.

The next regression analysis is the model of sign effect by including dummy negative earning variable into the regression model of equation 3.4.

Table 4.6

Regression Model for Aggregated Earnings in Sign Effect

Variable	Coef. β	t-stat.	Prob	R2	f-stat.
DM	-0.219	-1.565	0.119	52,47%	36.4
EARN	0.279	2.980	0.003		
CHEARN	0.783	9.549	0.000		
DEARN	-0.239	-2.355	0.020		
DCHEARN	-0.421	-2.211	0.028		
C	0.123	2.137	0.034		

When the dummy variable is incorporated to the regression, there is a change in the result of coefficient. Table 4.5 shows the result of regression of the equation 3.4 towards 171 companies of which the negative earnings are separated into dummy variable. The coefficient DM is valued negative and the probability is greater than 0.05 which means that there is no significance increase of relevance in predicting stock returns ($\beta = -0.219$, $p = 0.119$). The negative value of β DM shows that the increasing value of negative earnings will result in the decreasing value of stock returns.

The Coefficient of β EARN is valued positive and significant when sign effect is not incorporated and then it is valued negative and significant when the earning variables are incorporated by sign effect ($\beta_6 = 0.279$, $p = 0.003$; $\beta_8 = -0.239$, $p = 0.020$). This result also works in change of earnings in which the value of change of earnings becomes negative by sign effect ($\beta_7 = 0.783$, $p = 0.000$; $\beta_9 = -0.421$, $p = 0.028$). It means that value relevance of both earnings and changes of earnings are significantly influenced when the sign effect is incorporated to the regression.

The value of R^2 equals to 52,47% meaning that independent variables, earnings, changes of earnings, as well as when earnings are incorporated with dummy into dummy earnings and dummy changes of earnings, can explain stock returns equals to 52,47% and the rest of 47,53% is explained by the other variables.

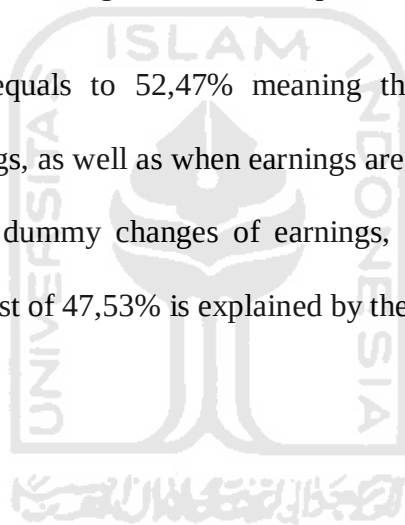


Table 4.7

Regression Model for Disaggregated Earnings in Sign Effect

Variable	Coef. β	t-stat.	Prob	R2	f-stat.
DM	-0.449	-2.408	0.017	25.61%	6.16
CF	0.706	5.444	0.000		
CHCF	-0.068	-0.172	0.864		
DCF	0.301	0.697	0.487		
DCHCF	-0.630	-0.836	0.404		
ACC	-0.596	-4.694	0.000		
CHACC	-0.004	-0.031	0.975		
DACC	0.466	3.314	0.001		
DCHACC	-0.163	-0.546	0.586		
C	0.238	3.264	0.001		

Table 4.6 shows the regression of equation 3.4 of the 171 sample companies with negative earnings that are separated as dummy variable. When the dummy variable is incorporated to the regression, there are changes in the result of coefficient. The coefficient of DM is valued negative and significant to the relevance in predicting stock returns ($\beta_5 = -0.449$, $p = 0.017$). Hence, because the value of coefficient DM is negative, it means that if the increase of variable DM results in the

decreasing value of stock returns significantly. It is significant because the value of probability is less than 0.05 ($p = 0.017 < 0.05$).

In this table, only coefficient of CF shows positive and significant relationship in predicting stock returns ($\beta_6 = 0.706$, $p = 0.000$). It means that cash flows significantly influence the value relevant in predicting stock returns and the increase value of cash flows result in the increase value of stock returns. But when it is incorporated with negative earnings, the DCF insignificantly increases the relevance ($\beta_8 = 0.301$, $p = 0.487$). Here the coefficient ACC negatively influences stock returns ($\beta_{10} = -0.596$, $p = 0.000$) while the coefficient DACC positively influences the stock returns ($\beta_{12} = 0.466$, $p = 0.001$). This relation is consistent with Barth et al (1999) who states that between cash flows and accruals is “mirror images”, which means if the coefficient accrual is valued negative and significant, the coefficient of cash flows is expected to be valued positive and significant.

The value of R^2 equals to 25,61% meaning that earning components of cash flow, change of cash flow, accrual, and change of accrual, also the dummy for each variable can explain stock returns that are equals to 25.61% and the rest of 74,39% is explained by the other variables.

The result of regression analysis with the model of Dummy for Negative Earning (Sign effect model) can be seen in the attachment of earning model, cash

flow and accrual model. The increase (decrease) of R^2 between disaggregated effect and sign effect can be seen as:

Table 4.8

The True Value Relevance of Earnings

Regression	Standard Specification	Dummy for Negative Earning
Aggregate Earning	47,7%	52,46%
Cash Flow + Accrual	22,74%	25,61%

Source: Secondary Data Analyzed, 2012

Table of 4.5 shows the explanatory power in value relevance regressions where earnings are disaggregated into components and the coefficients on the earnings items are sign dependant. Here the R^2 can only be used to compare two or more models based on the power to explain the relationship of the hypothesis. This table shows that the model of aggregate earnings explains stock returns of 47,7%. When considering dummy for negative earnings, the explanatory power increases to 52,46%. This result is consistent with previous researcher Barth et al.(2001). The same result for the value of model of cash flow and accrual with standard specification equals to 22,74%. It increases to 25,61% after considering dummy for negative earning. The Sign effect has important role in predicting stock return. The explanatory power of the regression will increase if dummy for negative earnings is taken into account. This increase supports the H_2 .

There are many researchers support this research which compares the relevancy of accounting information toward the stock returns such as Collins, Maydew, & Weiss (1997), in different industry that was done by Francis, et al.(2003), in different country by Ali & Lee-seok (2000), or in analyzing change in value relevance after new accounting standard by Hann, Heflin, & Subramanayam (2007). The result of research consistently finds that research which does not consider the components of earnings and dummy for negative earnings will result in bias information. Beisland (2010) presents evidences that there is an increase of explanatory power from disaggregate effect model to the sign effect model that may not be constant in each model of sample.

4.2.4 Stationary Analysis

For testing the stationary of the return and trading volume data, Augmented Dickey Fuller test is used in this analysis. The result of this stationary analysis of stock returns and trading volume can be seen from this table:

Table 4.9

Stationary Test

Variable	Augmented Dickey-Fuller test statistic	Critical Value (a=5%)	p-value	Results
Stock Returns	-3.242568	-2.878413	0.0193	Data was stationary
Trading Volume	-11.68447	-2.878413	0.0000	Data was stationary

According to Augmented Dickey Fuller test statistics, the value of stock returns variable equals to -3,242568 which is higher than the critical value (at $\alpha=5\%$ level) -2,878413 with the probability $0,0193 < 1$. Hence, it was concluded that data for stock returns is stationary. The data for stock return is then suitable for the VAR model.

According to the Augmented Dickey Fuller test statistics, the value of trading volume variable equals to -11.68447 which is higher than the critical value (at $\alpha=5\%$ level) equals to -2.878413 with the probability equals to $0,000 < 1$. Hence, it was concluded that the data for trading volumes is stationary. The data for trading volumes is then suitable for the VAR model.

Hence, based on the statistical value, the third hypothesis which states that “Both stock returns and trading volumes are stationary” is proven. It means that both the stock returns and trading volumes have mean and variation that are relatively constant in a period of time. Hence, all the data are then suitable for the VAR model.

4.2.5 VAR Model Analysis Regression

This analysis is used to analyze the relationship between stocks returns and trading volumes which have proven stationary. The result of VAR model can be seen from the table:

Table 4.10

VAR Model

Variable	Coeff.	Stand. Error	T statistic	t tabel
Return (t-1)	0.206691	0.07201	2.8701	1.9742709
Return (t-2)	0.167537	0.07174	2.3354	1.9742709
Trading	14.65685	2.95875	4.9537	1.9742709
Constanta	0.048249	0.07296	0.6613	1.9742709
R Square	0.2225			

According to the result of regression analysis of VAR model, it can be calculated that the value of t-statistics of trading volume equals to 4.9537 higher than t-test which equals to 1.9742709. It can be concluded that the relationship between stock returns and trading volume is significantly proven. The value of coefficient of each variable shows positive value meaning that the higher trading volume results in the increase value of stock returns. This result also shows that return t-1 and return t-2 have a positive relationship toward the trading volumes ($\beta_1 = 0.207$, $\beta_2 = 0.167$).

This result matches with the result of Asghar (2011) which founds that by VAR model of regression there is a positive relationship between stock returns and trading volume. Hence, the forth hypothesis which states that “There is a positive relationship between stock return and trading volume” is significantly proven. It means that the vector auto regression (VAR) model shows positive relationship between stock returns and trading volumes.

4.3 Hypothesis Result

4.3.1 H₁: **There will be an increasing in the value relevance of earnings if disaggregated effect is incorporated in predicting stock returns**

After conducting the test toward the data, the result shows that the relationship between disaggregation earnings and stock returns is proven to increase significantly. As seen from the hypothesis testing, the null hypothesis failed to reject if at least the β_i were not equal to zero. In table 4.4 the coefficient β CHCF shows a negative insignificant ($\beta_1 = -0.125$, $p = 0.728$) which means that the value of coefficient β CHCF is zero but the coefficient of ACC shows a significant value ($\beta = -0.631$, $p = 0.000$), the coefficient CF shows significant value ($\beta = 0.745$, $p = 0.000$), and the coefficient of CHACC shows significant value ($\beta = 0.498$, $p = 0.000$). These results are enough to reject the H_0 .

From those results, the null hypothesis failed to reject which means that the disaggregated effect will increase the value relevance in predicting stock returns. This result is consistent with the previous researcher Leif Beisland (2011) which states that value relevance of earnings may increase substantially as earnings are disaggregated into components. In conclusion disaggregated effect will increase the value relevance of earnings in predicting stock returns.

4.3.2 H₂: There will be an increasing in the value relevance of earnings if the sign effect is incorporated in predicting stock returns

After conducting the result, the researcher found that there was a significant increase of value relevance of earnings in predicting stock returns if the sign effect is incorporated in predicting stock returns. From table 4.5 the researcher can see that the coefficient DM for aggregated earnings is ($\beta_5 = -0.219$, $p = 0.119$) meaning that the value of coefficient DM in aggregate effect is equal to zero.

Then in table 4.6, the coefficient of DM for disaggregated earnings is valued negative and significant to the relevancy in predicting stock returns ($\beta_5 = -0.449$, $p = 0.017$). Hence, because the value of coefficient DM is negative, it means that the value of coefficient DM has a significant relationship in predicting stock returns. This result supports the H₂ where the incorporated sign effect will increase the value relevance of earnings in predicting stock returns.

This result is also supported by the table 4.8 which shows that the model of aggregate earnings of stock returns increase from 47,7% to 52.46% when considering dummy for negative earnings. The same result for the value of model of cash flow and accrual with standard specification which equals to 22,74% increases to 25,61% after considering dummy for negative earning. This result is consistent with the previous researcher Barth et al.(2001).

From the test, the researcher concludes that the result of the second hypothesis (H₂) which represents that there is an increase value relevance of earnings if the sign

effect is incorporated in predicting stock returns is supported or proven. All these findings are consistent with prior research (Francis & Schipper, 1999; King & Langli, 1998). The conclusion is that regardless of the aggregation level of earnings, the explanatory power of the regressions will increase if the sign of earnings is taken into account.

4.3.3 H₃: Both stock returns and trading volumes are stationary

The data for stock returns is stationary. It is seen from the table 4.8 which shows that according to Augmented Dickey Fuller test statistics, the value of stock returns variable equals to -3,242568 which is higher than the critical value (at $\alpha=5\%$ level) equals to -2,878413 with the probability equals to $0,0193 < 1$. Then the value of trading volume variable equals to -11.68447 which is higher than the critical value (at $\alpha=5\%$ level) equals to -2.878413 with the probability equals to $0,000 < 1$. It means that both the stock returns and trading volumes have mean and variation that are relatively constant in a period of time. Hence, all the data are then suitable for the VAR model.

4.3.4 H₄: There is a significant relationship between stock return and trading volume.

There is a significant positive relationship between stock returns and trading volumes. It can be concluded that based on the value of coefficient of each variable, positive value is gained meaning that the higher trading volume results increase the value of stock returns. This result also shows that return $t-1$ and return $t-2$ have a

positive relationship toward the trading volumes ($\beta_1 = 0.207$, $\beta_2 = 0.167$). This result matches with the result of Asghar (2011) which found that by VAR model of regression there is a positive relationship between stock returns and trading volume.



CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

According to the result of the analysis and discussion, it can be concluded as follow:

1. There is significantly increasing value relevance between earning variables which regard to disaggregate effect and the stock returns. It means that when the earnings are disaggregated into components, the value relevance in predicting stock returns will increase as well.
2. There is significantly increasing value relevance in predicting stock returns when sign effect is incorporated to the published accounting earning variables. It means that the usefulness of value relevance is increasing if sign dependant earnings are applied in the empirical analyses. This finding is also supported with the result of explanatory power where the value increases for both earnings, namely aggregate and disaggregated earnings.
3. All data of stock returns and trading volumes are stationary. It means that the data of stock returns and trading volumes have a mean and variation which are relatively constant over a period of time.

4. There is a significant relationship between stock returns and trading volumes. It means that the higher stock returns results in the increase of trading volumes.

5.2 Limitation of Research

This research has a limitation in some areas:

1. The limitation of sample size that only involved the companies in the list of 50 most active IDX members in total trading volume that were listed in BEI data from the period of 2006-2010. This sample cannot be assumed as representing the whole population.
2. This analysis model regression did not consider the classic assumption test such as normality test, multikolinieritas, autocorrelation, and heteroscedasty, which can influence the result of the analysis of regression.

5.3 Recommendations

1. For investors in predicting the stock return through the earning components, it would be better to pay attention to the sample in negative earnings because it is proven to give a stronger influence in predicting stock returns. But if the earnings variables are disaggregated into cash flow and accrual, the result will decrease the relevancy. It may be because the Indonesians investors are more

concerned to the earning value as the profit of the company and do not specifically focus on detail accounting information.

2. For next researchers, it is recommended to add the size of the sample of population, and add the classic assumption test in order that the regression is far from bias information.



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APPENDICES



Table 4.1
Data Collection Result

Notes	Number of Companies
Companies included in the list of 50 most active IDX members in total trading volume (2006-2010)	250
Financial firms	54
Incomplete financial statement information	25
Appropriate companies	171

Source: Data Processed

Table 4.2
Distributional Characteristics

	Positive Earning (N=142)		Negative Earning (N=29)	
	Mean	St. Dev	Mean	St. Dev
EARN	0.244	0.633	-1.274	3.012
CH_EARN	0.271	0.722	0.004	0.700
CF	0.229	0.706	0.241	0.544
CH_CF	0.026	0.218	-0.033	0.280
ACC	-0.007	0.775	1.515	3.308
CH_ACC	-0.072	0.597	0.018	0.591
RETURN	0.403	0.911	-0.144	0.669

Source: Secondary data analyzed, 2012

Table 4.3
Pearson Correlation Matrix

	RETURN	EARN	CH_EARN	CF	CH_CF	ACC	CH_ACC
Negative Earning Sample (N=29)							
RETURN	1.000						
EARN	0.239	1.000					
CH_EARN	0.408*	0.164	1.000				
CF	0.287	-0.481*	0.202	1.000			
CH_CF	0.064	0.082	0.504*	0.403*	1.000		
ACC	-0.170	-0.990*	-0.116	0.603*	-0.008	1.000	
CH_ACC	-0.058	-0.151	-0.795*	0.191	-0.140	0.169	1.000
Positive Earning Sample (N=142)							
RETURN	1.000						
EARN	0.473*	1.000					
CH_EARN	0.707*	0.450*	1.000				
CF	0.214*	0.326*	0.216*	1.000			
CH_CF	-0.023	-0.114	-0.004	0.494*	1.000		
ACC	-0.166*	-0.509*	-0.149*	0.641*	0.544*	1.000	
CH_ACC	-0.130	-0.328*	-0.167*	0.189*	0.442*	0.442*	1.000

* (Statistical significance at a 5% level)

Table 4.4

Regression Model for Aggregate Earnings

Variable	Coef. β	t-stat.	Prob	R2	f-stat.
EARN	0.092	2.609	0.010	47,73%	76.7
CHEARN	0.787	10.96	0.000		
C	0.134	2.555	0.011		

Source: Secondary Data Analyzed, 2012

Table 4.5

Regression Model for Disaggregated Earnings

Variable	Coef. β	t-stat.	Prob	R2	f-stat.
CF	0.745	6.084	0.000	22,74%	12.2
CHCF	-0.125	-0.348	0.728		
ACC	-0.631	-5.618	0.000		
CHACC	0.498	3.930	0.000		
C	0.174	2.601	0.010		

Source: Secondary Data Analyzed, 2012

Table 4.6
Regression Model for Earnings in Sign Effect

Variable	Coef. β	t-stat.	Prob	R2	f-stat.
DM	-0.219	-1.565	0.119	52,47%	36.4
EARN	0.279	2.980	0.003		
CHEARN	0.783	9.549	0.000		
DEARN	-0.239	-2.355	0.020		
DCHEARN	-0.421	-2.211	0.028		
C	0.123	2.137	0.034		

Table 4.7

Regression Model for Cash Flows and Accruals in Sign Effect

Variable	Coef. β	t-stat.	Prob	R2	f-stat.
DM	-0.449	-2.408	0.017	25.61%	6.16
CF	0.706	5.444	0.000		
CHCF	-0.068	-0.172	0.864		
DCF	0.301	0.697	0.487		
DCHCF	-0.630	-0.836	0.404		
ACC	-0.596	-4.694	0.000		
CHACC	-0.004	-0.031	0.975		
DACC	0.466	3.314	0.001		
DCHACC	-0.163	-0.546	0.586		
C	0.238	3.264	0.001		

Table 4.8

The True Value Relevance of Earnings

Regression	Standard Specification	Dummy for Negative Earning
Aggregate Earning	47,7%	52,46%
Cash Flow + Accrual	22,74%	25,61%

Source: Secondary Data Analyzed, 2012

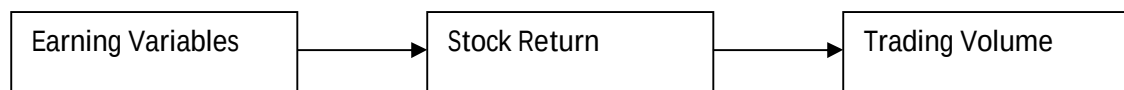
Table 4.9
Stationary Test

Variable	Augmented Dickey-Fuller test statistic	Critical Value (a=5%)	p-value	Results
Stock Returns	-3.242568	-2.878413	0.0193	Data was stationary
Trading Volume	-11.68447	-2.878413	0.0000	Data was stationary

Table 4.10
VAR Model

Variable	Coeff.	Stand. Error	T statistic	t tabel
Return (t-1)	0.206691	0.07201	2.8701	1.9742709
Return (t-2)	0.167537	0.07174	2.3354	1.9742709
Trading	14.65685	2.95875	4.9537	1.9742709
Constanta	0.048249	0.07296	0.6613	1.9742709
R Square	0.2225			

Figure 2.7.1
Relationship of Variables



Appendix 1

Regression Result Aggregate Earnings

Dependent Variable: RETURN

Method: Least Squares

Date: 01/29/12 Time: 15:08

Sample: 1 171

Included observations: 171

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EARN	0.092364	0.035406	2.608681	0.0099
CHEARN	0.787301	0.071815	10.96285	0.0000
C	0.134170	0.052504	2.555438	0.0115
R-squared	0.477277	Mean dependent var		0.310494
Adjusted R-squared	0.471054	S.D. dependent var		0.897161
S.E. of regression	0.652494	Akaike info criterion		2.001357
Sum squared resid	71.52566	Schwarz criterion		2.056474
Log likelihood	-168.1161	Hannan-Quinn criter.		2.023722
F-statistic	76.69683	Durbin-Watson stat		1.546680
Prob(F-statistic)	0.000000			

Appendix 2

Regression Result Aggregated Earnings in Sign Effect

Dependent Variable: RETURN

Method: Least Squares

Date: 01/29/12 Time: 15:11

Sample: 1 171

Included observations: 171

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DM	-0.218733	0.139729	-1.565409	0.1194
EARN	0.278633	0.093485	2.980510	0.0033
CHEARN	0.782885	0.081984	9.549285	0.0000
D_EARN	-0.239376	0.101657	-2.354734	0.0197
D_CHEARN	-0.420991	0.190435	-2.210678	0.0284
C	0.123382	0.057730	2.137246	0.0341
R-squared	0.524657	Mean dependent var		0.310494
Adjusted R-squared	0.510252	S.D. dependent var		0.897161
S.E. of regression	0.627851	Akaike info criterion		1.941430
Sum squared resid	65.04250	Schwarz criterion		2.051664
Log likelihood	-159.9923	Hannan-Quinn criter.		1.986158
F-statistic	36.42351	Durbin-Watson stat		1.409082
Prob(F-statistic)	0.000000			

Appendix 3

Regression Result Disaggregated Earnings

Dependent Variable: RETURN

Method: Least Squares

Date: 01/29/12 Time: 15:17

Sample: 1 171

Included observations: 171

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CF	0.745224	0.122479	6.084498	0.0000
DCF	-0.125318	0.359949	-0.348154	0.7282
ACC	-0.631341	0.112378	-5.618031	0.0000
DACC	0.497565	0.126616	3.929725	0.0001
C	0.173810	0.066834	2.600640	0.0101
R-squared	0.227460	Mean dependent var		0.310494
Adjusted R-squared	0.208845	S.D. dependent var		0.897161
S.E. of regression	0.797997	Akaike info criterion		2.415380
Sum squared resid	105.7087	Schwarz criterion		2.507242
Log likelihood	-201.5150	Hannan-Quinn criter.		2.452654
F-statistic	12.21891	Durbin-Watson stat		1.263261
Prob(F-statistic)	0.000000			

Appendix 4

Regression Result for Disaggregated Earnings in Sign Effect

Dependent Variable: RETURN

Method: Least Squares

Date: 01/29/12 Time: 15:14

Sample: 1 171

Included observations: 171

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DM	-0.449017	0.186484	-2.407799	0.0172
CF	0.706516	0.129782	5.443854	0.0000
CHCF	-0.067974	0.395746	-0.171760	0.8638
DCF	0.301637	0.432590	0.697282	0.4866
DCHCF	-0.630352	0.753892	-0.836130	0.4043
ACC	-0.596302	0.127031	-4.694159	0.0000
CHACC	-0.004123	0.132790	-0.031049	0.9753
DACC	0.466516	0.140758	3.314316	0.0011
DCHACC	-0.162732	0.298021	-0.546044	0.5858
C	0.238484	0.073074	3.263616	0.0013
R-squared	0.256118	Mean dependent var		0.310494
Adjusted R-squared	0.214535	S.D. dependent var		0.897161
S.E. of regression	0.795122	Akaike info criterion		2.436058
Sum squared resid	101.7873	Schwarz criterion		2.619781
Log likelihood	-198.2830	Hannan-Quinn criter.		2.510605
F-statistic	6.159147	Durbin-Watson stat		1.347010
Prob(F-statistic)	0.000000			

Appendix 5

Augmented Dickey-Fuller Test for Trading

Null Hypothesis: TRADING has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=13)

		t-Statistic
Augmented Dickey-Fuller test statistic		-11.68447
Test critical values:	1% level	-3.468980
	5% level	-2.878413
	10% level	-2.575844

*MacKinnon (1996) one-sided p-values.

Appendix 6

Augmented Dickey-Fuller Test for Return

Null Hypothesis: RETURN has a unit root

Exogenous: Constant

Lag Length: 3 (Automatic - based on SIC, maxlag=13)

		t-Statistic
Augmented Dickey-Fuller test statistic		-3.242568
Test critical values:	1% level	-3.469691
	5% level	-2.878723
	10% level	-2.576010

*MacKinnon (1996) one-sided p-values.

Appendix 7

Augmented Dickey-Fuller Test Equation for Trading

Dependent Variable: D(TRADING)

Method: Least Squares

Date: 01/29/12 Time: 15:22

Sample (adjusted): 2 171

Included observations: 170 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRADING(-1)	-0.896537	0.076729	-11.68447	0.0000
C	0.009168	0.001783	5.141206	0.0000
R-squared	0.448325	Mean dependent var		6.41E-06
Adjusted R-squared	0.445041	S.D. dependent var		0.028033
S.E. of regression	0.020883	Akaike info criterion		-4.888025
Sum squared resid	0.073268	Schwarz criterion		-4.851133
Log likelihood	417.4821	Hannan-Quinn criter.		-4.873055
F-statistic	136.5269	Durbin-Watson stat		1.998674
Prob(F-statistic)	0.000000			

Appendix 8

Augmented Dickey-Fuller Test Equation for Return

Dependent Variable: D(RETURN)

Method: Least Squares

Date: 01/29/12 Time: 15:23

Sample (adjusted): 5 171

Included observations: 167 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETURN(-1)	-0.328811	0.101405	-3.242568	0.0014
D(RETURN(-1))	-0.525486	0.103920	-5.056646	0.0000
D(RETURN(-2))	-0.430113	0.093777	-4.586557	0.0000
D(RETURN(-3))	-0.276789	0.074101	-3.735283	0.0003
C	0.095512	0.069230	1.379638	0.1696
R-squared	0.446621	Mean dependent var		0.004841
Adjusted R-squared	0.432958	S.D. dependent var		1.057314
S.E. of regression	0.796181	Akaike info criterion		2.411502
Sum squared resid	102.6924	Schwarz criterion		2.504855
Log likelihood	-196.3604	Hannan-Quinn criter.		2.449392
F-statistic	32.68678	Durbin-Watson stat		2.082915
Prob(F-statistic)	0.000000			

Appendix 9

Vector Autoregression Estimates

Date: 01/29/12 Time: 15:25

Sample (adjusted): 3 171

Included observations: 169 after

adjustments

Standard errors in () & t-statistics in []

	RETURN
RETURN(-1)	0.206691 (0.07201) [2.87013]
RETURN(-2)	0.167537 (0.07174) [2.33540]
C	0.048249 (0.07296) [0.66133]
TRADING	14.65685 (2.95875) [4.95373]
R-squared	0.222511
Adj. R-squared	0.208374
Sum sq. resids	106.0146
S.E. equation	0.801569

F-statistic	15.74051
Log likelihood	-200.3964
Akaike AIC	2.418892
Schwarz SC	2.492973
Mean dependent	0.315272
S.D. dependent	0.900909

Appendix 10

Distributional characteristics for Aggregated Earnings

	RETURN	EARN	CHEARN
Mean	0.310494	-0.013743	0.225572
Median	0.037736	0.065910	0.015921
Maximum	3.465649	5.963924	5.007081
Minimum	-0.942529	-11.02178	-0.832846
Std. Dev.	0.897161	1.467256	0.723389
Skewness	1.223156	-5.125814	3.661994
Kurtosis	4.628454	41.70970	19.43518
Jarque-Bera	61.53365	11425.20	2306.762
Probability	0.000000	0.000000	0.000000
Sum	53.09446	-2.350087	38.57285
Sum Sq. Dev.	136.8327	365.9830	88.95962
Observations	171	171	171

Appendix 11

Distributional characteristics for Disaggregated Earnings

	RETURN	CF	CHCF	ACC	CHACC
Mean	0.310494	0.231392	0.016377	0.250983	-0.057101
Median	0.037736	0.091304	0.010342	0.039301	0.002143
Maximum	3.465649	6.099402	1.165748	12.69827	1.181293
Minimum	-0.942529	-2.614059	-0.758757	-5.336117	-5.731788
Std. Dev.	0.897161	0.679794	0.229623	1.621427	0.595048
Skewness	1.223156	4.266493	1.169218	5.044891	-6.084319
Kurtosis	4.628454	37.94039	9.629375	37.70482	54.10665
Jarque-Bera	61.53365	9217.205	352.0954	9306.877	19664.76
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	53.09446	39.56808	2.800480	42.91817	-9.764192
Sum Sq. Dev.	136.8327	78.56040	8.963508	446.9343	60.19393
Observations	171	171	171	171	171

Appendix 12

Correlation Coefficients for the Negative Earnings Sample

Covariance Analysis: Ordinary

Date: 01/29/12 Time: 16:26

Sample: 1 171

Included observations: 171

Correlation

Probability	RETURN	DM	EARN	CHEARN	D_EARN	D_CHEARN
RETURN	1.000000					
DM	-0.229603 0.0025	1.000000				
EARN	0.321449 0.0000	-0.389208 0.0000	1.000000			
CHEARN	0.675354 0.0000	-0.138976 0.0699	0.268416 0.0004	1.000000		
D_EARN	0.151086 0.0485	-0.365121 0.0000	0.917659 0.0000	0.110581 0.1499	1.000000	
D_CHEARN	0.122164 0.1114	0.004985 0.9484	0.134453 0.0796	0.391878 0.0000	0.150601 0.0493	1.000000

Appendix 13

Correlation Coefficients for the Positive Earnings Sample

Covariance Analysis: Ordinary

Date: 01/29/12 Time: 16:27

Sample: 1 171

Included observations: 171

Correlation					
Probability	RETURN	CF	CHCF	ACC	CHACC
RETURN	1.000000				
CF	0.213567 0.0050	1.000000			
CHCF	0.013803 0.8578	0.467647 0.0000	1.000000		
ACC	-0.190677 0.0125	0.428411 0.0000	0.166431 0.0296	1.000000	
CHACC	-0.130412 0.0891	0.189038 0.0133	0.314658 0.0000	0.252427 0.0009	1.000000