



THE EFFECT OF FINANCIAL LEVERAGE ON FIRM VALUE AND MARKET RISK

**(Research on Consumer Goods Industries Listed In Indonesian Stock
Exchange In the Year of 2010-2012)**

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Submitted to Fulfill the Partial Requirement for Acquiring
Master Degree in Business Administration



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AGREEMENT SIGN OF THESIS

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Malang, 01 Februari 2014

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SUMMARY

(Erindah Dimisyqiyani, The Effect Of Financial Leverage On Firm Value And Market Risk, 142 pages), Prof. Dr. Suhadak, M.Ec, Dr. Kertahadi, M.Com

A company produces goods for obtaining a target of profit. A company obtains a profit from the total revenue minus production costs incurred by the company. When a company tries to get a maximum profit, the company should keep producing with a minimum cost. If a company wants to produce goods, the company must have a sufficient fund to operate smoothly. However, a company does not always operate smoothly. If the company experiences bottlenecks in its operation and requires funding, it must cover the required costs. If the fund needed is insufficient, then the fund is covered by a leverage. It will arise debt as a consequence of the loan. This suggests that the company has financial leverage.

Financial leverage shows that a firm with debt on its balance sheet is a levered firm, and a firm that finances its operations entirely with equity is an unlevered firm (Megginson, et al, 2007 p. 451). A company has to produce goods, and a manager has to know the firm value that can be determined by measuring the EPS and ROE. The most common measures of the company performance are earnings per share (EPS) and the results of return on equity (ROE) (Weston and Copeland, 2010 p. 95).

This research is conducted to study the consumer goods industries listed in Indonesian stock exchange in the year of 2010-2012. The research uses path analysis. Data were collected from 13 companies by annual report. The research suggests that the variable of Degree of Financial Leverage (DFL) has a positive significant effect on the variable of Earning Per Share (EPS). The variable of Degree of Financial Leverage (DFL) has a positive significant effect on the variable of Return On Equity (ROE). The variable of Debt Ratio (DR) has a negative and a non significant effect on the variable of Earning Per Share (EPS). The variable of Debt Ratio (DR) has a negative and a non significant effect on the variable of Return On Equity (ROE). The variable of Degree of Financial Leverage (DFL) has a positive significant effect on the variable of market risk (β). The variable of Debt Ratio (DR) has a positive significant effect on the variable of market risk (β). The variable of market risk (β) has a positive significant effect on the variable of Earning Per Share (EPS). The variable of market risk (β) has a positive significant effect on the variable of Return On Equity (ROE).



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Malang, 01 Februari 2014

The author,



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CHAPTER 1

INTRODUCTION

1.5 Background

A company produces goods for obtaining a target of profit. Profit is obtained by a company from the total revenue minus production costs incurred by a company. While a company tries to get a maximum profit, the company should keep producing with a minimum cost. If a company wants to produce goods, the company must have a sufficient fund to operate smoothly. One of the sources of the fund commonly used by a company comes from the external sources of funding. It means that the fund is not available from the operation of the company. It derives from other parties outside the company.

External funding can be either short term debt, long term debt or equity. Debt is a loan from the outside of a company with a specified time, such as bank debt, debt to investors in the form of bonds, and debt to suppliers. External funding derives from the equity belonging to the owner of the company. They are the shareholders of common and preferred stock.

The operation of a company does not always run smoothly. If the company is experiencing constraints in operation and requires more funding, it must cover the required costs. If the fund needed is internally insufficient, then the fund is covered by leverage. When the company gets loan with fixed charges from the outside of the company, it will arise debt as a consequence of the loan. This suggests that the company has financial leverage. According to Megginson, Smart, Gitman (2007, p. 451),

“Financial leverage can say that a firm with debt on its balance sheet is a levered firm, and a firm that finances its operations entirely with



equity is an unlevered firm. In Britannia, they refer to debt as gearing. These terms imply that debt magnifies a firm's financial performance in some way. That effect can be either positive or negative, depending on the returns a firm earns on the money it borrows."

Financial leverage or debt is one of financial planning of a company. A manager has to know the condition of a company before using the financial leverage. A Leverage is obtained not only on the fund for production but it is also taken to increase the profits for shareholders.

Proper use of leverages would increase return on equity and Earning Per Share. If a manager wants to use debt and leverage, the manager has to manage it correctly because higher returns also result in higher risks for a company. Therefore, the use of financial leverage can be a balancing act. If the company cannot meet its obligations, then the company will face bankruptcy or liquidation, as experienced by The Bakrie Company that decreased shares due to the amount of debt to be paid.

An analyst of PT Batavia Prosperindo Securities Julio Parningotan (2012) in Azhar (2012), suggested investors to avoid the shares of Bakrie group for a while, following the falling stock of Bakrie Group last few days. It is advisable to stay away from the Bakrie Group shares, especially the shares of Bumi Resources (BUMI), which slumped deeply since last June. He took the example of The BUMI shares last May, which were still sold in the range of Rp 2,000 per share, but today is traded at Rp 670 per share. According to Julio, global factors decreased commodity prices, caused poor financial statements, as well as drastically reduced the ability of BUMI to pay its debt. However, prospective investors can still do a short-term transaction with accurate notes and take a careful action in order to avoid losses. Investors who have already owned BUMI shares should be waiting for the right time to sell their shares. Therefore,



for those who want to buy the shares of BUMI in short term should be suspended until it drops to the bottom. He recommended that the investors turn to investing stocks of the consumer and the infrastructure sector, which were tended rising lately. Unlike BUMI which is affected by international commodity, consumer and infrastructure sectors tend to be defensive on the global economy (<http://www.tempo.co/read/news/2012>).

Based on the previous statement, Julio Parningotan recommended the investors to turn to stock of consumers because this sector tends to be defensive on the global economy, and shares of this type have a low risk. Moreover, the investment is not impaired by a decrease in the overall market value of the investment. Therefore, the companies can get maximum return from producing this sector. If the companies do not have a sufficient fund for their productions, the companies can use debt to produce goods in order to increase profit instead of using only a limited number of their own capital. The company increases profit in order to keep the firm's value, one of them increases Return On Equity (ROE) and Earning Per Share (EPS). It will give a benefit for shareholders from its return.

If the assets of a company are well managed and get a maximum value, the profits can be gained to the maximum. This suggests that using of financial leverage for the company is very important because it assures the company to continue its operations.

A manager has to figure out the firm value, which can be determined by measuring its EPS and ROE. The most common measurements of the company performance are earnings per share (EPS) and the result of return on equity (ROE) (Weston and Copeland, 2010 p. 195). The company's debt can be seen by using debt to total assets (DR). Using of debt to total assets (DR) as an



independent variable is to search the acquisition of the ratio of total debt divided by total assets. Effect of changes in earnings before interest and taxes (EBIT) to earnings per share (EPS) can be described using the Degree of financial leverage (DFL). In this case the DFL to give effect to EPS and ROE. DFL used as independent variables in this study aims to look at the level of EPS and ROE to be obtained by the company at the company's EBIT generated.

Return On Equity (ROE) is a measure of how the stockholders fared during the year (Ross, Westerfield, Jaffe, 2008 p. 53). When associated with the source of funding, ROE is an exact measurement because this ratio is the result of the return on shareholders' equity to measure the return earned on the book value. In a business, a leverage is obtained not only on the fund for production but it is also taken to increase the profits accruing to the company. Using leverage in the capital structure will not have impact on the sales, operating profits, but it will increase the share of the equity shareholders or Return on Equity (ROE).

Earnings per share, i.e the amount of income earned on a share of common stock during an accounting period applies only to common stock and to corporate income statements (Gibson, 2009 p. 338). According to Fabozzi and Peterson (2003 p.780-782),

"Basic earnings per share is earnings (minus preferred dividends), divided by the average number of shares outstanding, which is the previous standard's simple earnings per share. Diluted earnings per share is earnings (minus preferred dividends), divided by the number of shares outstanding considering all dilutive securities (e.g., convertible debt, options), which is the previous standard's fully diluted earnings per share. Companies that report earnings per share for any prior period must restate these amounts in terms of the new basic and diluted calculations. The objective of the new reporting standard is to bring U.S. accounting in line with international accounting for earnings per share"



Based on the previous analysis, the researcher wants to know the effect of financial leverage on firm value and market risk. Financial leverage variables used in this study consist of debt to total assets (DR) and degree of financial leverage (DFL). Variables of firm value in this research consist of earnings per share (EPS) and return on equity (ROE). The intervening variable in this research is market risk (β). According to Horcher (2005 p. 3),

“Financial risk management is a process to deal with the uncertainties resulting from unpredictable financial markets. It involves assessing the financial risks an organization faces and developing management strategies, that is consistent with internal priorities and policies. Managing financial risk necessitates making organizational decision about risks that are acceptable versus those are not. The passive strategy of taking no action is the acceptance of all risks by default. Organizations manage financial risk using a variety of strategies and product. It is important to understand how these products and strategies work to reduce risk within the context of the organization's risk tolerance and objectives”.

Therefore, financial leverage can generate a financial risk born by the company as a result of the debt. So, if a manager cannot manage the debt, the debt can generate bankruptcy or liquidation for the company. According to Ehrhardt and Brigham (2011), the market risk is a risk that remains after diversifying. The diversifiable risk is portion of a stock's risk that can be eliminated, while the section that cannot be eliminated is called market risk. The rational investors will eliminate the risk, but it will be irrelevant. Diversifiable risk is caused by random events such as strikes, lawsuits, winning or losing a major contract, successful and unsuccessful marketing, and other events that are unique in the company.

Random events can affect a portfolio, it can be eliminated by diversification. If the company has a bad event, it will be balanced by other good events. A market risk comes from factors that systematically affect most companies such as inflation,



war, high interest rates and recessions. A market risk cannot be eliminated by diversification because most stocks are negatively affected by these factors.

The researcher took the object of research in the consumer goods industries companies on the Indonesian Stock Exchange. The researcher chooses the consumers' goods industries because the companies produce products that are often consumed by consumers. This causes the market share of products of consumer goods industries not only to a specific community like other industrial products, but also to the middle-market segment up or down the middle. So the industries have good prospect and can maintain the firm's value in order to stay well. Consumer goods industries have a strong sector for consumer products primarily needed by people. The level of demand is quite stable against a wide range of consumer products with global situation showing defensive nature of the consumers' sector, especially for consumer goods in the territory of Indonesia where the target market of consumer goods is human.

The consumer goods industries consist of food and beverages company, tobacco manufacturers company, pharmaceuticals company, cosmetics and household company, and house wares company. This research is important for consumer goods industries even though the consumer product has all of market share ranging from the down-market segment until the up market segment. If the researcher sees from market risk affected by factors systematically affecting most firms which are war, inflation, recessions, and high interest rates. It means that the consumers' goods industries have problems with the factors, but the consumers' goods industries tend to be defensive. So, these industries have a low risk. Then the consumers' goods industries can loan fund



from outside of the company, which means that the consumers' goods industries use the financial leverage.

Previous researches on the effect of financial leverage have been done, but there are inequalities of past research results. Previous researchers described the effect of financial leverage on Earning Per Share (EPS) and Return On Equity (ROE) while the researcher explained the effect of financial leverage on firm value and market risk. Value of the firm can be seen by measuring the EPS and ROE. This research found that there are differences in research not only describing the effect of financial leverage on EPS and ROE, but also explaining how financial leverage affects firm's value and market risk because the value of good company shows that the company can operate properly. Based on the previous statement, the researcher is interested in conducting research entitled "The Effect of Financial Leverage on firm value and market risk (Research on Consumer Goods Industries Listed in Indonesian Stock Exchange in the Year of 2010-2012)".

1.6 The Research Questions

Based on the previous statement that has been presented in the background, the researcher formulates the problems as follows:

- (1) Can the *Degree of Financial Leverage (DFL)* affect *Earning Per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012?
- (2) Can the *Degree of Financial Leverage (DFL)* affect *Return On Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012?



(3) Can the *Debt to Total Assets (DR)* affect *Earning Per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012?

(4) Can the *Debt to Total Assets (DR)* affect *Return On Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012?

(5) Can the *Degree of Financial Leverage (DFL)* affect the *market risk* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012?

(6) Can the *Debt to Total Assets (DR)* affect the *market risk* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012?

(7) Can the *market risk* affect *Earning Per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012?

(8) Can the *market risk* affect *Return On Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012?

1.7 The Research Objectives

This research's objectives are:

(1) Analyzing and describing the effect of *Degree of Financial Leverage (DFL)* on *Earning Per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.



- (2) Analyzing and describing the effect of *Degree of Financial Leverage (DFL)* on *Return On Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.
- (3) Analyzing and describing the effect of *Debt to Total Assets (DR)* on *Earning Per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.
- (4) Analyzing and describing the effect of *Debt to Total Assets (DR)* on *Return On Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.
- (5) Analyzing and describing the effect of *Degree of Financial Leverage (DFL)* on *market risk* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.
- (6) Analyzing and describing the effect of *Debt to Total Assets (DR)* on *market risk* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.
- (7) Analyzing and describing the effect of *market risk* on *Earning Per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.
- (8) Analyzing and describing the effect of *market risk* on *Return On Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.

1.8 The Contribution of Research

The study is expected to provide the following benefits:



(1) Theoretical Usefulness

(a) Can be used as contributions to the field of finance, particularly in the case of debt or financial leverage.

(b) As the discourse and referrals for further research on how the effect of financial leverage on firm value and market risk is.

(2) Practical Usefulness

(a) Researcher can determine how the theories and concepts can be applied during the lecture.

(b) As the input material and consideration for the company to manage the company's finances.

(c) As the material discussion for academic, practitioners, and the problem enthusiasts of the financial leverage to participate in completing the measures taken by the company.



CHAPTER II

LITERATURE REVIEW

2.3 The Overview of Previous Studies

2.3.1 On The Relationship Between Systematic Risk And The Degrees

Of Operating And Financial Leverage

According to Gahlon and Gentry (1982), the result of previous research is the exhibit assumes that the cash flow correlation coefficient is a positive constant. An increase in expected revenue reduces DOL, DFL, and CV (REV). While an increase in the contribution margin reduces the first two real-assets risk measure. In the former situation, however, systematic risk increases because both DOL and DFL rise, while in the later situation, it increases because only DFL rises.

This finding of the research is the managerial of firm efforts on making their strategic, operating, and financial decisions (Gahlon and Gentry, 1982) have the greatest potential for increasing value. This research uses empirical research with quantitative approach. Hypotheses in this research are DOL, DFL affects β_n (systematic risk). Variable in this research are DOL, DFL, CV (REV), and β_n . The result of research by Gahlon and Gentry (1982) is supported by Alaghi (2011) in his journal titled "Financial Leverage and Systematic Risk". In his research, Alaghi suggest that financial leverage has an effect on the systematic risk of listed in the companies in Tehran Stock Exchange.



2.1.2 Correlation between Financial Leverage and Financial Performance

According to Akhtar, et al (2012), the result of previous research is aimed to examine the hypothesis and to measure a relationship between the financial leverage and the financial performance of the fuel and energy sector in Pakistan. The paper also examines the generalization of the firms with higher profitability by using various statistical tools. The findings of the study show a positive relation between the financial leverage and the financial performance of the companies by accepting the alternate hypothesis H1 and rejecting Ho. The results of the study confirm that the companies with higher profitability may improve their financial performance by obtaining high levels of financial leverage. The study provides evidence by evaluating different facts. It reveals that the players of the fuel and energy in Pakistan can improve their financial performance by employing the financial leverage and making vital decisions about the choice of their optimal capital structure. Variables in this research are Return On Assets (ROA), Return On Equity (ROE), dividend cover ratio, dividend ratio to equity, net profit margin, earning per share before tax, earning per share after tax, sales as % of total assets, earning per share before tax growth, sales growth, DFL, and debt equity ratio. The result of research by Akhtar, et al (2012) is supported by journal of Yoon and Jang (2005), titled "The Effect of Financial Leverage on Profitability and Risk". The result of research by journal of Yoon and Jang (2005) suggested that at least during the test period, the size of the company had a more dominant effect on Return On Equity rather than on the debt used by the company, the larger the earning of the company is the



higher the equity returns will be. Results also suggest that regardless of the size of the company, using the Financial Leverage poses the same risk.

2.1.3 Impact of Financial Leverage on Shareholders Return and Market Capitalization

According to Saini (2012), the results of previous research are:

- On the basis of descriptive statistics, mean is higher of Gemini and Tata company in case of financial leverage, market capitalization and shareholder return in the telecommunication industry.
- As standard deviation of MTNL and Bharti Airtel is low, so it can conclude that MTNL and Bharti Airtel is having lowest fluctuation in case of financial leverage, market capitalization and shareholder return in the telecommunication industry.
- Positive correlation is found between financial leverage and shareholder return for telecommunication industry.
- Negative correlation is found between financial leverage and market capitalization for telecommunication industry.
- No significant impact of financial leverage on shareholder return is found as significant value is greater than significant level i.e. 0.05 in the telecommunication industry.
- Financial leverage shows significant impact on market capitalization as significant value is less than significant level i.e. 0.05 in the telecommunication industry.



- The total valuation of a firm may increase through different combination of the three variables, viz. financial leverage, shareholder return and market capitalization
- Financial leverage is more effective for any organization where internal rate of return is higher than its cost of capital.

This research uses empirical research with Quantitative approach. Hypotheses in this research are there is no significant impact of financial leverage on shareholders' return and there is no significant impact of financial leverage on market capitalization. Variable in this research are shareholders' return, market capitalization, and DFL. The result of research by Saini (2012) is supported by Akhtar, et al (2012), in his titled "Correlation between Financial Leverage and Financial Performance", shows a positive relation between them. The results of the study confirm that the firms having higher profitability may improve their performance financially by having high levels of financial leverage.

2.1.4 Financial Leverage, Firm's Growth and Financial Strength

According to Zhao and Wijewardana (2012), this study is aimed to extend knowledge of *financial leverage*, *firm's growth* and *financial strength* listed in the Sri Lanka companies. Most of the scholars have studied *financial leverage* and its related attributes in developing and emerging capital markets. The pioneering work of Modigliani and Millar, and many scholars revealed that the *financial leverage* is one of the most influencing factors in determining the firm's growth. The common approach in empirical capital structure studies has been to examine the relationship between observed *financial leverage* and value of the firm and share prices. In this



study tests, the problem towards Sri Lanka context. The main goal of this study is to investigate whether the financial leverage influences negatively or positively on signaling the firms' growth.

Sample size for this study is 30% of thirteen sectors. The required data were collected from published annual reports, Handbook of listed companies in Colombo Security Exchange and annual reports of Central Bank of Sri Lanka from 2000 to 2009. The financial leverage variables are calculated based on empirical findings. Growth of the companies is represented by total assets, profit, and sales. Multiple discriminant function is constructed to ascertain financial strength variables. Multiple regression model is employed.

This research uses empirical research with quantitative approach.

Hypothesis in this research are:

- Among the *financial leverage* measurement *total assets* are significantly associated with growth and *financial strength* variables.
- Profit growth is positively associated with *financial leverage*.
- Sales growth is negatively associated with *financial leverage*.
- Financial strength is negatively associated with *financial leverage*.
- Asset growth is positively associated with *financial leverage*.

Variables in this research are *financial leverage*, *profit growth*, *sales growth*, *financial strength*, and *asset growth*. The overall results of the study finds that *financial leverage* in the Sri Lanka context is positively related to growth and *financial leverage*. Conversely, this condition supports the view that



there is a positive rather than a negative relation between *financial leverage* and other *growth variables* as implied by the negative signals about the future growth of the company.

2.1.5 The Effect of Financial Leverage on Profitability and Risk

Yoon and Jang (2005) presents an empirical insight into the relationship between return on equity (ROE), financial leverage and firm size in the restaurant industry during 1998 till 2003 using OLS regressions. Hypothesis in this research, are:

- Restaurant firms using a lower level of financial leverage have higher profitability.
- Restaurant firms with a higher level of financial leverage are riskier than those with a lower level of financial leverage.
- Market-based measures and accounting-based measures are positively correlated to each other.

Variables in this research are Financial leverage, Return On Equity, and Market risk. Research results suggest that at least during the test period firm size has a more dominant effect on ROE for restaurant firms than debt use, larger firms earning significantly higher equity returns. Results also suggest that regardless of having lower financial leverage, smaller restaurant firms were significantly more risky than larger firms. As such, the dominance of size effect in the ROE-financial leverage relationship within the restaurant industry is better understood. The result of research by Yoon and Jang (2005) is supported by Akhtar, et al (2012), in his research titled "Relationship between *Financial Leverage* and *Financial Performance*". The result of research shows a positive relation between *financial leverage* and



financial performance. The results of the study confirm that the firms having higher profitability may increase their *financial performance* by obtaining high levels of *financial leverage*.

2.1.6 The Factors That Influence Financial Leverage

The purpose of Gill and Mathur's research (2011) is to find the factors that influence financial leverage of Canadian firms. They picked a sample of 166 Canadian firms listed on the Toronto Stock Exchange for a period of 3 years (from 2008 till 2010). This study applied co-relational and non-experimental research design. This research uses empirical research with quantitative approach. Hypothesis in this research is there is an influence from Financial Leverage of Canadian firms on the Collateralized Assets, Profitability, Effective Tax Rate, Firm Size, Growth Opportunities, Number of Subsidiaries, and Industry Dummy.

Variables used in this research are *Financial Leverage (MTL)*, *Collateralized Assets (MCA)*, *Profitability (ROA)*, *Effective Tax Rate (METR)*, *Non-Debt Tax Shield (MNDTS)*, *Firm Size (Ln S)*, *Growth Opportunity (GTA)*, *Subsidiaries (SUB)*, *Industry Dummy*. The result shows that the *collateralized assets*, *profitability*, *effective tax rate*, *firm size*, *growth opportunities*, *number of subsidiaries*, and *industry dummy* affect *financial leverage* of Canadian firms. This study contributes to the literature on the factors that influence *financial leverage* of the firm. The findings may be useful for Financial Managers, Investors, and Financial Management Consultants.



2.1.7 The Influence of Financial Leverage on Shareholders Return and Market Capitalization

The present research by Pachori and Totala in 2012 explored the effect of *financial leverage* on *shareholders' return* and *market capitalization* of automotive cluster companies of Pithampur (M.P.) India. Pachori and Totala undertook seven major automotive public companies to represent the cluster. The applied Simple Linear Regression out to see the impact of *financial leverage* on *shareholders' return* and *market capitalization* individually. So, the influence of the leverage can be measured.

This research uses Empirical research with Quantitative approach. Hypothesis in this research are there is no significant influence of *financial leverage* on both *shareholders' return* and *market capitalization*. Variables in this research are *shareholders' return*, *market capitalization* and *financial leverage*. The overall findings indicate that there is no significant influence of *financial leverage* on *shareholder's return* and *market capitalization*. The study also concludes that there might be other non-quantitative factors which may lead to nullify the impact of *financial leverage* on *shareholders return* like recession, saturation of auto industry, competition and government policy. It is important to note that *financial leverage* is a speculative technique and there are special risks and costs involved with *financial leverage*. Indeed there can be no assurance that a financial leverage strategy will be successful during any period in which it is employed. The result of research by Pachori and Totala (2012) is supported by Saini (2012), titled "The Impact of Financial Leverage on Shareholders Return and Market Capitalization". One of the result of research by Saini (2012) shows that the



total valuation of a firm may increase through different combination of the three variables, they are financial leverage, shareholder return and market capitalization.

2.1.8 The Effect of *Leverage* on *Firm Value* and How the *Firm Financial Quality* Influence on This Effect

In this paper, Cheng and Tzeng (2009) applied the *least square dummy variable (LSDV)* to estimate the effect of *leverage* on *firm value* and contextual variables influencing on this relationship. It was 645 companies listed in Taiwan Securities Exchange (TSE) from 2000 till 2009. Hypothesis in this research are:

- The values of a *leverage firm* are greater than that of the *unleveraged firm*.
- The positive influence of *leverage* to *firm value* tends to be stronger when bankruptcy probability is lower.
- *Leverage* positively influence *firm value* before reaching the firm's optimal capital structure.
- The positive influence of *leverage* to *firm value* tends to be stronger when *firm financial quality* is better.

Variables in this research are the *value of a firm (VL)*, the *total liabilities of a firm (DL)*, the *expected earnings after taxes and before interest ((1- θ) θ L)*, *Z-score Model*. The empirical results show as follows: Firstly, the *values of leveraged firm* are greater than that of an *unleveraged firm* if we don't consider bankruptcy probability. Secondly, If we consider the benefit and cost of debt simultaneously, the *leverage* is significantly positively related to the *firm value* before reaching firm' optimal capital structure. Thirdly, the



positive influence of *leverage* to the *firm value* tends to be stronger when the *firm financial* quality is better (i.e., the greater Z-score). The result of the research by Cheng and Tzeng (2009) are supported by Akhtar, et al (2012), titled "The Relationship between Financial Leverage and Financial Performance". The result of research by Akhtar, et al (2012) shows that there is a positive relationship between the *financial leverage* and *financial performance*. The results of the study confirm that the firms having higher profitability may improve their *financial performance* by having high levels of *financial leverage*.

2.1.9 Profitability and Leverage

Through this research, Akinlo and Asaolu (2012) examines the profit profile of firms in Nigeria and analyzes the impact of leverage on profitability during 1999 till 2007. The results show that aggregate profit level for the firms decreased by 0.02 percent yearly over the study period. However, when disaggregated into sectors, a few firms actually experienced an increased profit level. This research uses Empirical research with Quantitative approach. Variables in this research are Profitability, leverage and the control variable size. The results show that firm size has a significant positive effect on profitability, while leverage has a negative effect on it. The paper suggests that expansion, increase sales and low debt ratios enhance firm profitability. The result of research by Akinlo and Asaolu (2012) are supported by Akhtar, et al (2012), entitled "The Relation between Financial Leverage and Financial Performance". The result of research by Akhtar, et al (2012) shows a positive relation between the *financial leverage* and *financial performance*. The results of the study confirm that the firms



having higher profitability may improve their financial performance by having high levels of financial leverage.

2.1.10 Impact of Leverage on Risk and Stock Returns

In comparison to the research conducted by Bhatti, et al (2010) which aimed to investigate the effect of *leverage* on *stock returns* and *systematic risk* in the corporate sector of Pakistan. This study determines the relation between leverage and systematic risk. The data was collected from eight industries, they were cotton, engineering, chemicals, sugar and allied, cement, fuel, energy, transport and communications. The researchers found out that high level of leverage could create a high level of *systematic risk*, leading to high volatility in the stock prices.

This research uses Empirical research with Quantitative approach.

The hypothesis used in this research are:

- *High leverage increases the risk.*
- *High leverage decreases the risk.*
- *High leverage increases the stock return.*
- *High leverage decreases the stock return*

The result of this research is a high level of leverage creating a high level of systematic risk, leading to high volatility in the stock prices of these industries traded on Karachi Stock Exchange (KSE). The underwriters in Pakistan significantly underpriced the new issues (IPO's) to minimize their own risks of the new issues. This underpricing cause's direct loss to the issuing firm and their collection of funds is lower than the intrinsic value of the issued stock. It may temporarily increase the stock price of the firm but in the long run it works negatively and increases the systematic risk of the firm



leading to lowest stock prices. The result of research by Bhatti, et al (2010) are supported by Alaghi (2011), with the title of financial leverage and systematic risk. The result of research by Alaghi (2011) is financial leverage has effect on the systematic risk of listed companies in Tehran Stock Exchange.

2.1.11 The Effect Of Financial Leverage On Corporate Performance

According to Ojo (2012) in his journal is attempts to juxtapose the earlier findings that were specific of developed nations, econometric technique of *Vector Auto Regression (VAR)* model was employed. The findings revealed that *Leverage shocks* exert substantially on corporate performance in Nigeria. In addition, *Earnings per Share (EPS)* depends more on feedback shock and less on *leverage shock*. *Leverage shocks* on *Earnings Per Share* indirectly affect the *Net Assets Per Share* of firms as the bulk of the shocks on the *Net Assets Per Share* was received from *Earnings Per Share* of the firms. Therefore, *leverage* significantly affect *corporate performance* in Nigeria.

2.1.12 Financial Leverage and Systematic Risk

The aim of this Alaghi's (2011) research is to examine the effect of *financial leverage* in the *systematic risk* of listed companies in Tehran Stock Exchange. This research uses Empirical research with Quantitative approach. In this research, *financial leverage (FL)* as independent variables and *systematic risk (β)* as the dependent variable is considered. While significant at $\leq 0/05$ H_0 hypothesis, is rejected. Otherwise, there is no other adequate reason for rejecting H_0 hypothesis. For testing the hypothesis of this study, linear regression technique has been used. According to the



results obtained, H_0 is rejected because significant = $0.00 < 0.05$. Thus, financial leverage has effect on the systematic risk of listed companies in Tehran Stock Exchange. The result of research by Alaghi (2011) is supported by Bhatti, et al (2010), in his titled "Effect of Leverage on Risk and Stock Returns". The result of research by Bhatti, et al (2010) are a high level of leverage creating a high level of systematic risk, leading to high volatility in the stock prices of these industries traded on Karachi Stock Exchange (KSE).

Previous researches can be summarized in the table mapping.

Table 1. Previous Researches

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
1	James M. Gahlon and James A. Gentry	On The Relationship Between Systematic Risk and the Degrees of Operating and Financial Leverage	The result of this research are cash flow correlation coefficient is a positive constant. An increase in expected revenue reduces DOL, DFL, and CV (REV). while an increase in the contribution margin reduces the first two real-asset risk measure. However, systematic risk increases because both DOL and DFL rise, while in the later situation it increases because only DFL rises.	Empirical research with Quantitative approach	DOL, DFL affect β_n (systematic risk)	DOL, DFL, CV (REV), and β_n

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
2	<u>Shehla Akhtar</u> , et al	Relationship between Financial Leverage and Financial Performance: Evidence from Fuel & Energy Sector of Pakistan	The findings of the study show a positive relationship between the financial leverage and the financial performance of the companies. The results of the study confirm that the firms having higher profitability may improve their financial performance by having high levels of financial leverage	Empirical research with Quantitative approach	Financial leverage has got a positive relationship with financial performance of the companies operating in fuel and energy <u>sector</u> .	Return On Assets (ROA), Return On Equity (ROE), dividend cover ratio, dividend ratio to equity, net profit margin, earning per share before tax, earning per share after tax, sales as % of total <u>assets</u> , earning per share before tax growth, sales growth, DFL, debt equity ratio.
3	<u>Rajni Saini</u>	Impact of Financial Leverage On Shareholders Return and	On the basis of descriptive statistics, mean is higher of Gemini and Tata company in case of financial leverage,	Empirical research with Quantitative approach	There is no significant impact of financial leverage on	shareholders' return, market capitalization, and DFL

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
		Market Capitalization: Empirical Evidence of Telecommunication Sector Companies, India	market capitalization and shareholder return in the telecommunication industry - Financial leverage shows significant impact on market capitalization as significant value is less than significant level i.e. 0.05 in the telecommunication industry. - The total valuation of a firm may increase through different combination of the three variables, viz. financial leverage, shareholder return and market capitalization - financial leverage is more effective for any organization where internal rate of return is higher than its cost of capital		shareholders' return. There is no significant impact of financial leverage on market capitalization	

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
4	Bei Zhao and W.P Wijewardana	Financial Leverage, Firm Growth and Financial Strength: Evidence in Sri Lanka	The results of the study find financial leverage in the Sri Lankan context to be positively related to the growth and financial leverage. Conversely, this situation supports this view that there is a positive rather than a negative relationship between financial leverage and other growth variables as implied by the negative signals about the future growth of the company.	Empirical research with Quantitative approach	• Among the FL measurement TD/TA are significantly associated with growth and FS variables. • Profit growth is positively associated with FL. • Sales growth is negatively associated with FL. • Financial strength is negatively associated with FL. • Asset growth is positively associated with FL.	Financial Leverage, Profit growth, Sales growth, Financial strength, and Asset growth
5	Eunju Yoon and SooCheong Jang	The Effect of Financial Leverage on Profitability	Research results suggest that at least during the test period firm size had a more dominant effect on ROE of restaurant	Empirical research with Quantitative	• Restaurant firms using a lower level of financial leverage have	Financial leverage, Return On Equity, and

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
		and Risk of Restaurant Firms	<u>firms</u> than debt use, larger firms earning significantly higher equity returns. Results also suggest that regardless of having <u>lower</u> financial leverage, smaller restaurant firms were significantly more risky than larger firms.	approach	• <u>higher</u> profitability. Restaurant • <u>firms</u> with a higher level of financial leverage are riskier than those with a lower level of financial leverage. Market-based measures and accounting-based measures are positively correlated to each other	Market risk
6	<u>Amarjit Gill</u> and <u>Neil Mathur</u>	Factors that Influence Financial Leverage of Canadian Firms	The results show that financial leverage of Canadian firms is influenced by the collateralized assets, profitability, effective tax rate, firm size, growth opportunities, number of subsidiaries, and industry dummy.	Empirical research with Quantitative approach	There are influence financial leverage of Canadian firms on the collateralized assets, profitability, effective tax rate, firm size, growth	Financial Leverage (MTL), Collateralized Assets (MCA), Profitability (ROA), Effective Tax

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
7	CA Sachchidanand Pachori, and Navindra K. Totala	Influence of Financial Leverage on Shareholders Return and Market Capitalization: A Study of Automotive Cluster Companies of Pithampur, (M.P.), India	The findings indicate that there is not significant influence of financial leverage on shareholder's return and market capitalization. The study also concludes that there might be other <u>non quantitative</u> factors which may lead to nullify the impact of financial leverage on shareholders return like recession, saturation of auto industry, competition and government policy.	Empirical research with Quantitative approach	- There is no significant influence of financial leverage on shareholders' return. - There is no significant influence of financial leverage on market capitalization	Rate (METR). Non-Debt Tax Shield (MNDTS), Firm Size (<u>LnS</u>), Growth Opportunity (GTA), Subsidiaries (SUB), <u>IndDum</u> shareholders' return, market capitalization and financial leverage

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
8	Ming-Chang Cheng and Zuwei-Ching Tzeng	The Effect of Leverage on Firm Value and how the firm financial quality influence on this effect	The results show as follows: Firstly, the values of leveraged firm are greater than that of an unleveraged firm if we don't consider bankruptcy probability. Secondly, If we consider the <u>benefit</u> and cost of debt simultaneously, the leverage is significantly positively related to the firm value before reaching firm optimal capital structure. Thirdly, the positive influence of leverage to the firm value tends to be stronger when the firm financial quality is better (i.e., the greater Z-score).	Empirical research with Quantitative approach	- The values of a leveraged firm are greater than that of the unleveraged <u>firm</u>. - The positive influence of leverage to <u>firm</u> value tends to be stronger when bankruptcy probability is lower. - Leverage positively influence firm value before reaching the firm's optimal <u>capital</u> structure. - The positive influence of leverage to firm value tends to be stronger	the value of a firm (VL), the total liabilities of a firm (DL), the expected earnings after taxes and before interest ((1)0L), Z-score Model

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
					when firm financial quality is better	
9	Olayinka Akinlo and Taiwo Asaolu	Profitability and Leverage: Evidence from Nigerian Firms	The results show that aggregate profit level for the firms decreased by 0.02 percent yearly over the study period. However, when disaggregated into sectors, a few firms actually experienced an increased profit level. The results show that firm size has a significant positive effect on profitability, while leverage has negative effect. The paper suggests that expansion, increased sales and low debt ratios enhance firm profitability.	Empirical research with Quantitative approach	-	Profitability, leverage and the control variable size.
10	Afkar Majeed Bhatti, et al	Affect of Leverage on Risk and Stock Returns: Evidence from Pakistani Companies	The result of this research that is, a high level of leverage creating a high level of systematic risk, leading to high volatility in the stock prices of these industries traded on Karachi Stock Exchange (KSE). The underwriters in Pakistan significantly underpriced the new issues	Empirical research with Quantitative approach	• High leverage increases the risk. • High leverage decreases the risk. • High leverage increases the stock return.	Leverage, risk and stock return.

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
			(IPO's) to minimize their own risks of the new issues. This <u>underpricing</u> causes direct loss to the issuing firm and their collection of funds is lower than the intrinsic value of the issued stock. It may temporarily increase the stock price of the firm but in the long run it works negatively and increases the systematic risk of the firm leading to lowest stock prices.		High leverage decreases the stock return.	
11	Akinmulegun Sunday Ojo	The Effect of Financial Leverage on Corporate Performance of Some Selected Companies in Nigeria	The findings revealed that Leverage shocks exert <u>substantially</u> on corporate performance in Nigeria. In addition, Earnings Per Share (EPS) depends more on <u>feedback</u> shock and less on leverage shock. Leverage shocks on Earnings Per Share indirectly affect the Net Assets Per Share of firms as the bulk of the shocks on the <u>Net Assets Per Share</u> was received from Earnings Per Share of the firms. Leverage therefore	Empirical research with Quantitative approach	-	The leverage (LEV), measured by the debt-equity ratio and corporate performance indicators represented by earnings per share (EPS) and the net assets per share (NAPS)

No	The Researcher	The Title	Research Result	Research Method	Hypothesis	variable
			significantly affect corporate Performance in Nigeria.			
12	Kheder Alaghi	Financial leverage and systematic risk	financial leverage has effect on the systematic risk of listed companies in Tehran Stock Exchange	Empirical research with Quantitative approach	- Financial leverage has no effect on the systematic risk of listed companies in Tehran stock exchange. - Financial leverage has effect on the systematic risk of listed companies in Tehran stock exchange	financial leverage (FL) and systematic risk (β)



2.4 The Theoretical Framework

2.4.1 Leverage

2.2.1.1 Definition of Leverage

Companies use leverage to price its fixed assets in order to run its operations and increase return or income for the company or its shareholders. According to Anderson (1987 p. 38),

“Leverage: the use of fixed charge obligations with the intent of magnifying the potential return to the firm. Financial leverage: a measure of the amount of debt used in the capital structure of the firm. Financial leverage is beneficial only if the firm can employ the borrowed funds to ear a higher rate of return than the interest rate on the borrowed amount.”

Leverage indicates the debt owned by the company. The fund is used by the company comes from external funding or external financial. External funding comes from outside the company, which means the fund is not derived from the company's operations, but obtained from other parties outside the company. Debt used by the company to meet its financial obligation in spending company assets.

2.2.1.2 Leverage Ratio

When a company borrows money from the public or other parties, the company has to repay the fund and interest that it has borrowed. If the company cannot pay its debt in a long term, the company will suffer from bankruptcy. A debt of the company will likely require *financial leverage*. Leverage ratios measure how much *financial leverage* has been taken by the company. According to Brealey, et al (2001, p. 138),

“The market value of the company finally determines whether the debt holders get their money back, so you would expect analysts to look at the face amount of the debt as a proportion



of the *total market* value of debt and equity. One reason that they don't do this is that market values are often not readily available. Does it matter much? Perhaps not; after all, the market value of the firm includes the value of intangible assets generated by research and development, advertising, staff training, and so on. These assets are not readily saleable and, if the company falls on hard times, the value of these assets may disappear altogether. Thus when banks demand that a borrower keep within a maximum debt ratio, they are usually content to define this debt ratio in terms of book values and to ignore the intangible assets that are not shown in the balance sheet. Notice also that these measures of leverage take account only of long-term debt. Managers sometimes also define debt to include all liabilities."

Leverage ratio can be calculated by using the formula:

$$\text{Total Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

(Brealey, et al, 2001, p. 138)

According to Brealey, et al, (2011 p. 440),

"Debt policy were completely irrelevant, then actual debt ratios should vary randomly from firm to firm and industry to industry. Yet almost all airlines, utilities, banks, and real estate development companies rely heavily on debt. And so do many firms in capital intensive industries such as steel, aluminum, chemicals, petroleum, and mining. On the other hand, it is rare to find a pharmaceutical company or advertising agency that is not predominantly equity-financed. Glamorous growth companies rarely use much debt despite rapid expansion and often heavy requirements for capital."

Using of debt in a high proportion would harm the company because the company will be in the category of extreme leverage. Therefore, the company have to balance how much debt is viable and what resources can be used to pay debts. Thus, the company can use its finance appropriately and effectively.



2.2.1.3 Types of Leverage

(1) Operating Leverage

According to Keown, et al, (2002, p. 483), "Operating leverage arises from the firm's use of fixed operating costs. Operating leverage is the responsiveness of the firm's EBIT to fluctuations in sales. Operating leverage relationships are derived within the mathematical assumptions of costs volume profit analysis." The formula follows:

$$\text{Degree of Operating Leverage} = \text{DOL} = \frac{\text{Percentage change in EBIT}}{\text{Percentage change in sales}}$$

According to Fabozzi and Peterson (2003 p. 259), "The degree of operating leverage is the ratio of the percentage change in operating cash flows to the percentage change in units sold."

Based on Ehrhardt and Brigham (2011 p. 604),

"A high degree of operating leverage implies that a relatively small change in sales results in a relatively large change in EBIT, net operating profits after taxes (NOPAT), and return on invested capital (ROIC). Other things held constant, the higher a firm's fixed costs, the greater it's operating leverage. Higher fixed costs are generally associated with:

- (1) Highly automated, capital intensive firms;
- (2) Businesses that employ highly skilled workers who must be retained and paid even when sales are low; and
- (3) Firms with high product development costs that must be maintained to complete ongoing R&D projects."

(2) Financial Leverage

According to Keown, et al (2002, p. 472),

"Financial leverage means financing a portion of the firm's assets with securities bearing a fixed (limited) rate of return in hopes of increasing the ultimate return to the common



stockholders. The decision to use debt or preferred stock in the financial structure of the corporation means that those who own the common shares of the firm are exposed to financial risk. Any given level of variability in EBIT will be magnified by the firm's use of financial leverage, and such additional variability will be embodied in the variability of earnings available to the common stockholder and earnings per share. If these magnifications are negative, the common stockholder has a higher chance of insolvency than would have existed had the use of fixed-charge securities (debt and preferred stock) been avoided."

Financial leverage defines that a firm with debt on its balance sheet is a levered firm. Debt effect can be either positive or negative, depending on the returns a firm earns on the money it borrows (Megginson, Smart, Gitman, 2007, p. 451).

Financial risk is the risk associated with how a company finances its operations. If a company finances with debt, a company has to pay debts. By taking on fixed obligations, such as debt and long-term leases, the company increases its financial risk. If a company finances its business with equity, either generated from operations or from issuing new equity, it does not incur fixed obligations.

The degree of financial leverage (DFL) can be computed more easily as follows:

$$\text{Degree of Financial Leverage} = \frac{\text{Earnings Before Interest and Tax}}{\text{Earnings Before Tax}}$$

(Gibson, 2009, p. 336)

According to Fabozzi, and Peterson (2003, p. 615).

"Note that the degree of financial leverage represents a particular base level of income. The degree of financial leverage may differ for other levels of income or fixed charges. The degree of financial leverage formula will not work precisely when the income statement includes any of the following items:



- (1) Minority share of earnings
- (2) Equity income
- (3) Nonrecurring items
- (4) Discontinued operations
- (5) Extraordinary items

When any of these items are included, they should be eliminated from the numerator and denominator.

Marginal corporate tax rates change periodically, at the discretion of Congress. Interest rates change over time; it is therefore unlikely that refinancing in, say, 20 years will be at current interest rates. Further, you cannot always predict that a company will generate future income that will be sufficient to cover the interest expenses and the expected costs of financial distress are difficult to calculate. You cannot simply look at a firm and figure out the probability of distress for different levels of financial leverage. The probability of distress at different levels of debt financing may differ among firms, dependent upon their business risk. The costs of distress are also difficult to measure. These costs will differ from firm to firm, depending on the type of asset (that is, intangibles versus tangibles) and the nature of the firm's supplier and customer relationships."

According Ehrhardt and Brigham (2011:95),

"The extent to which a firm uses debt financing, or financial leverage, has three important implications:

- (1) By raising funds through debt, stockholders can maintain control of a firm without increasing their investment.
- (2) If the firm earns more on investments financed with borrowed funds than it pays in interest, then its shareholders' returns are magnified or leveraged, but their risks are also magnified.
- (3) Creditors look to the equity, or owner-supplied funds, to provide a margin of safety, so the higher the proportion of funding supplied by stockholders, the less risk creditors face. A firm whose sales are relatively stable can safely take on more debt and incur higher fixed charges than a company with volatile sales. Other things being equal, a firm with less operating leverage is better able to employ financial leverage because it will have less business risk and less volatile earnings."

(3) Total Leverage (Combination of Operating and Financial Leverage)

The risk associated with possible earnings per share is affected by the use of combined or total leverage. It is useful to quantify the effect.

The formal measure of combined leverage can be expressed as follows:



Degree of combined leverage from the base sales level (Keown, 2002: 490)

$$\text{Percentage change in earning per share} = \frac{\text{Percentage change in sales}}{\text{Percentage change in sales}}$$

2.2.2 Return On Equity (ROE)

Return on Equity (ROE) is a measure of how the stockholders fared during the year. Because benefiting shareholders is our goal, ROE is, in an accounting sense, the true bottom-line measure of performance. ROE is usually measured as:

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Total Equity}}$$

(Ross, Westerfield, Jaffe, 2008: 53)

In addition, ROE is sometimes called return on net worth. Whatever it's called, it would be inappropriate to compare the result to, for example, an interest rate observed in the financial markets. When associated with the source of funding, Return on Equity (ROE) is a measurement exactly, because return on equity is the result of the return on company's equity to measure the return earned on the book value. Return on Equity (ROE) is properly measured by earnings as a proportion of equity at the start of the year rather than as a proportion of either end-of-year equity or the average of outstanding equity at the start and end of the year (Brealey, 2001, p. 99).

In a business, a leverage is obtained not only on the fund for production but it is also taken to increase the profits accruing to the company. Using leverage in the capital structure will not have impact on the sales, operating profits, but it will increase the share of the equity shareholders or Return on Equity (ROE). According to Brealey et al, (2001, p. 146), "The return on equity is identical to the return on assets. If the firm



is leveraged, the first term is greater than 1.0 (assets are greater than equity) and the fourth term is less than 1.0 (part of the profits are absorbed by interest). Thus leverage can either increase or reduce return on equity.

Leverage increases ROE when the firm's return on assets is higher than the interest rate on debt."

2.2.3 Earnings Per Share (EPS)

Computing earnings per share initially involves net income, preferred stock dividend declared and accumulated, and the weighted average number of shares outstanding, as follows:

$$\text{Earnings per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Number of Common Shares Outstanding}}$$

(Gibson, 2009, p. 338)

According to Fabozzi, and Peterson (2003, p. 780), the number of common shares outstanding can change for two reasons:

- (1) *Timing*: Net income is earned over a specific period of time, yet the number of shares outstanding may change over this period. Timing requires us to consider the net income relative to some meaningful measure of common shares outstanding during the same period. We can do this by first calculating the weighted average number of shares outstanding during the period.
- (2) *Dilutive securities*: The company may have securities outstanding that can be converted into common stock or employee stock options and warrants that may be exercisable (i.e., potentially dilutive securities), so the number of shares of common that potentially may share in this net income is greater than the number reported as outstanding.

2.2.4 The Effect of Financial Leverage

According to Brealey, et al (2001, p. 560),

"Financial leverage refers to the extent to which a firm relies on debt. The more debt financing a firm uses in its capital structure, the more financial leverage it employs. Financial leverage can



dramatically alter the payoffs to shareholders in the firm. Remarkably, however, financial leverage may not affect the overall cost of capital. If this is true, then a capital structure of firm is irrelevant because changes in capital structure won't affect the value of the firm."

The researcher choose Degree of Financial Leverage (DFL) as independent variable and market risk or systematic risk as intervening variable, because there was previous study researching about Degree of Financial Leverage (DFL) with title the relationship between systematic risk and the degrees of operating and financial leverage by Gahlon and Gentry (1982). The result of this research is Degree of Financial Leverage (DFL) can increase systematic risk. The researcher choose Degree of Financial Leverage (DFL) and Debt to Total Assets or Debt Ratio (DR) as independent variable and Return On Equity (ROE) as dependent variable, because there was previous study researching about relationship between financial leverage and financial performance: evidence from fuel and energy sector of Pakistan by Akhtar (2012). The result of this research is Financial leverage has a positive relationship with financial performance (ROE) of the companies operating in fuel and energy sector. The researcher choose Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) as independent variable and Earnings Per Share (EPS) as dependent variable, because there was previous study researching about the effect of financial leverage on corporate performance of some selected companies in Nigeria by Ojo (2012). The result of this research is Financial leverage has a significantly affect corporate performance Earnings Per Share (EPS) in Nigeria.



2.2.5 Market Risk

According to Brealy, et al (2001 p. 330),

"The risk that can be eliminated by diversification is called unique risk. The risk that you can't avoid regardless of how much you diversify is generally known as market risk or *systematic risk*. *Unique risk* arises because many of the perils that surround an individual company are peculiar to that company and perhaps its direct competitors. *Market risk* stems from economy wide perils that threaten all businesses. Market risk explains why stocks have a tendency to move together, so that even well-diversified portfolios are exposed to market movements."

According to Ehrhardt and Brigham (2011, p. 238),

"The part of a stock's risk that can be eliminated is called diversifiable risk, while the part that cannot be eliminated is called market risk. The fact that a large part of the risk of any individual stock can be eliminated is vitally important, because rational investors will eliminate it and thus render it irrelevant. Diversifiable risk is caused by such random events as lawsuits, strikes, successful and unsuccessful marketing programs, winning or losing a major contract, and other events that are unique to a particular firm. Because these events are random, their effects on a portfolio can be eliminated by diversification, bad events in one firm will be offset by good events in another. Market risk, on the other hand stems from factors that systematically affect most firms: war, inflation, recessions, and high interest rates. Because most stocks are negatively affected by these factors, market risk cannot be eliminated by diversification. We know that investors demand a premium for bearing risk; that is the higher the risk of a security, the higher its expected return must be to induce investors to buy (or to hold) it. However, if investors are primarily concerned with the risk of their portfolios rather than the risk of the individual securities in the portfolio."

According to Brealy et al (2001, p. 333),

"The following businesses have substantial macro and market risks:

- (1) Airlines. Because business travel falls during a recession, and individuals postpone vacations and other discretionary travel, the airline industry is subject to the swings of the business cycle. On the positive side, airline profits really take off when business is booming and personal incomes are rising.
- (2) Machine tool manufacturers. These businesses are especially exposed to the business cycle. Manufacturing companies that have excess capacity rarely buy new machine tools to expand. During recessions, excess capacity can be quite high. Here, on



the other hand, are two industries with less than average macro exposures.

(3) Food companies. Companies selling staples, such as breakfast cereal, flour, and dog food, find that demand for their products is relatively stable in good times and bad.

(4) Electric utilities. Business demand for electric power varies somewhat across the business cycle, but by much less than demand for air travel or machine tools. Also, many electric utilities' profits are regulated. Regulation cuts off upside profit potential, but also gives the utilities the opportunity to increase prices when demand is slack."

Market or beta, risk, which is the risk of the project as seen by a well-diversified stockholder who owns many different stocks. A project of market risk is measured by its effect on the overall beta coefficient. Taking on a project with a high degree of either stand-alone or corporate risk will not necessarily increase the corporate beta (Ehrhardt and Brigham, 2011, p. 365).

2.2.6 Measure of Market risk

According to Brealey et al (2001, p. 408),

"Changes in interest rates, government spending, monetary policy, oil prices, foreign exchange rates, and other macroeconomic events affect almost all companies and the returns on almost all stocks. We can therefore assess the impact of *macro* news by tracking the rate of return on a market portfolio of all securities. If the market is up on a particular day, then the net impact of macroeconomic changes must be positive. We know the performance of the market reflects only macro events, because firm-specific events—that is, unique risks—average out when we look at the combined performance of thousands of companies and securities. In principle the market portfolio should contain all assets in the world economy—not just stocks, but bonds, foreign securities, real estate, and so on. In practice, however financial analysts make do with indexes of the stock market, usually the Standard and Poor's Composite Index (the S&P 500). Our task here is to define and measure the risk of *individual* common stocks. You can probably see where we are headed. Risk depends on exposure to macroeconomic events and can be measured as the sensitivity of a stock's returns to fluctuations in returns on the market portfolio. This sensitivity is called the stock's beta. Beta is often written as the Greek letter β ."



Every business opportunity or investment has a risk, the greater risk will get the greater benefits. Every businessman wants a big advantage with risk comparable or similar advantage with less risk. If we insert an element of risk in an investment election, then we will talk about the expected benefits. One of the commonly used measurements of risk is standard deviation, a statistical parameter to indicate the size of the deviation from the expectation value (Husnan, 1990).

The first attempt to define risk is in a portfolio. Understanding Portfolio is a collection of financial assets (securities). In a broad sense, a portfolio is defined as a set of investment opportunities. Portfolio theory is based on the emerging phenomenon of financial assets (stocks, bonds). Investors invest in some type of stock to reduce the fluctuations in the level of profits they earn, because the level of profits from each stock competing, a share provides a low level of profit, but the other shares provide a high level of profit (Husnan, 1990).

Diversification will reduce the risk, but as long as the investment does not have a correlation coefficient between the levels of advantages that a perfect negative, then we cannot eliminate fluctuations in the level of profit that portfolio. If we increase the number of stocks in a portfolio, fluctuations of the profit rate smaller that measure from the portfolio standard deviation. However, the standard deviation cannot reach zero. The risk that always there and cannot be eliminated by diversification is called systematic risk or market risk. Meanwhile, the risk that can be eliminated by diversification is called unsystematic risk or business risk. This systematic risk is also called as market risk because these fluctuations



is caused factors that affect all businesses operating. Factors such as economic conditions and tax policy. These factors led to a tendency for all stocks move together and thus always be there in each stock (Husnan, 1990).

2.2.7 Measure of Beta

According to Brealey, et al (2001, p. 409),

“An investor with a diversified portfolio will be interested in the effect each stock has on the risk of the entire portfolio. Diversification can eliminate the risk that is unique to individual stocks, but not the risk that the market as a whole may decline, carrying your stocks with it. Some stocks are less affected than others by market fluctuations. Investment managers talk about *defensive* and *aggressive* stocks. Defensive stocks are not very sensitive to market fluctuations. In contrast, aggressive stocks amplify any market movements. If the market goes up, it is good to be in aggressive stocks; if it goes down, it is better to be in defensive stocks (and better still to have your money in the bank). Aggressive stocks have high betas, betas greater than 1.0, meaning that their returns tend to respond more than one-for-one to changes in the return of the overall market. The betas of defensive stocks are less than 1.0. The returns of these stocks vary less than one-for-one with market returns. The average beta of all stocks is no surprises here-1.0 exactly.”

The contribution of a stock to the risk of a well-diversified portfolio, we should not look at risk if the shares are owned separately, but we have to measure the market risk and bring us to measure sensitivity to change market. Profit rate sensitivity to changes of market is called beta investment (Husnan, 1990). Beta is usually measured as:

$$\beta = \frac{\text{Cov}(R_i - R_M)}{\sigma^2(R_M)}$$

Information:

B_i : Beta i

$\text{Cov}(R_i - R_M)$: Covariance between the rate of profit stock i and the market portfolio



$\sigma^2 (R_M)$: Standard deviation of the rate of profit stock M.

(Husnan, 1990 p. 139-140)

Stock with a beta greater than 1 is referred to as an aggressive stock, while having a beta of less than 1 referred to as defensive stocks. Thus for stocks aggressively, if there is a change (increase or decrease) the advantages rate of market portfolio in the amount of 10%, then the rate of profit shares are changed in the same direction in the amount of 10% and vice versa for defensive stocks (Husnan, 1990)..



CHAPTER III

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

3.1 Conceptual Framework

A financial leverage is a technique that is used by a company in obtaining findings for operational activities of the company. Using of financial leverage is expected to improve the company's performance. The purpose of using financial leverage is to increasing returns or income to the shareholders or owners of the company. If the profit generated from debt increases, the company will gain higher profit and will be able to pay for its fixed assets. However, using of financial leverage is not always favorable because if the profit made by the company is smaller than fixed charges arising from using of debt, the company will suffer from loss. Using of the high financial leverage will increase the risk borne by the company because the financial burden will force the company to maintain a higher level of EBIT. Research type that is used is explanatory research with a quantitative approach.

This research's goal is to analyze and to describe the effect of financial leverage on firm value and market risk. In this research, the researcher explains about the effect of financial leverage on firm value and market risk. This research consists of independent variables, dependent variables, and an intervening variable. Independent variable is the variable that is systematically controlled by the researcher to determine the effect of that variable. The independent variables consist of Degree of Financial Leverage " X_1 " and Debt to Total Assets " X_2 " on firm value with the dependent variables consist of Earnings Per Share " Y_1 " and Return On Equity " Y_2 " and the intervening variable is market risk " Z " in the



consumers' goods industries companies listed in Indonesian Stock Exchange in the year of 2010 till 2012.

Debt to Total Assets (DR) is also called the ratio of total debt. Using of DR as an independent variable is to investigate the acquisition of the ratio of total debt divided by total assets. The effect of change in EBIT towards the earnings per share (EPS) can be described using the Degree of financial leverage (DFL). According to Ehrhardt and Brigham (2011 p. 238),

"The part of a stock's risk that can be eliminated is called diversifiable risk, while the part that cannot be eliminated is called market risk. The fact that a large part of the risk of any individual stock can be eliminated is vitally important, because rational investors will eliminate it and thus render it irrelevant. Diversifiable risk is caused by such random events as lawsuits, strikes, successful and unsuccessful marketing programs, winning or losing a major contract, and other events that are unique to a particular firm. Because these events are random, their effects on a portfolio can be eliminated by diversification, bad events in one firm will be offset by good events in another. Market risk, on the other hand stems from factors that systematically affect most firms: war, inflation, recessions, and high interest rates. Because most stocks are negatively affected by these factors, market risk cannot be eliminated by diversification. We know that investors demand a premium for bearing risk; that is the higher the risk of a security, the higher its expected return must be to induce investors to buy (or to hold) it. However, if investors are primarily concerned with the risk of their portfolios rather than the risk of the individual securities in the portfolio".

The instrument that is used in this research is comprised of documentation guidelines consisting of the necessary data and financial statements of the company. Another essential aspect to appreciate prior to embarking on any kind of statistical analysis is that variables assume different levels or scales. Referring to the research that is explained in the previous chapter, the conceptual model proposed in this research is about the effect of financial leverage on firm value and market risk. Research on consumers' goods



industries in Indonesian Stock Exchange listed in the year of 2010 till 2012 is as follow:

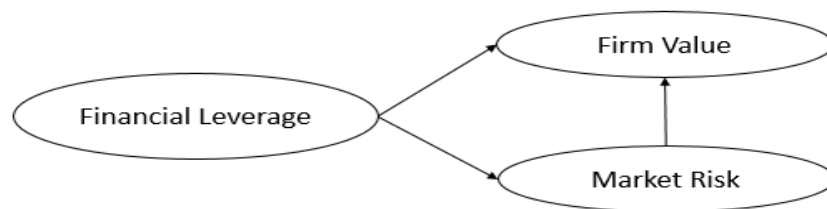


Figure 1. Conceptual Framework

3.2 Hypothesis

Referring to the research about the effect of financial leverage on firm value and market risk in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012 that is explained in the previous chapter, the hypothesis proposed in this research are as follows:

Hypothesis 1 : The *Degree of Financial leverage (DFL)* affects *Earnings per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.

Hypothesis 2 : The *Degree of Financial leverage (DFL)* affects *Return on Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.

Hypothesis 3 : The *Debt to Total Assets (DR)* affects *Earnings per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.

Hypothesis 4 : The *Debt to Total Assets (DR)* affects *Return on Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.



Hypothesis 5 : The *Degree of Financial Leverage (DFL)* affects *market risk* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.

Hypothesis 6 : The *Debt to Total Assets (DR)* affects *market risk* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.

Hypothesis 7 : The *market risk* affects *Earnings per Share (EPS)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.

Hypothesis 8 : The *market risk* affects *Return on Equity (ROE)* in the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012.

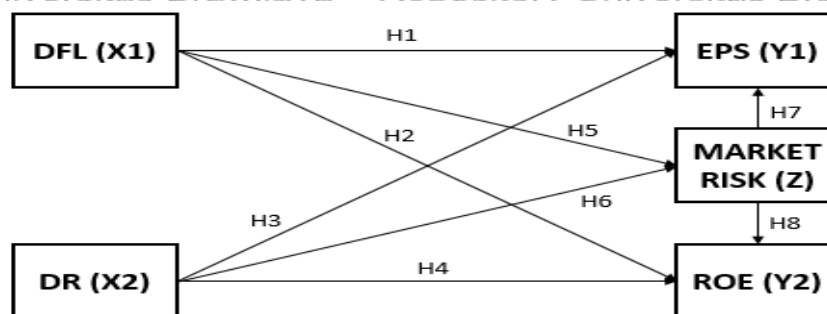


Figure 2. Hypothesis Model



CHAPTER IV

RESEARCH METHOD

4.1 Research Types

The researcher uses explanatory research with a quantitative approach for researching type. According to Creswell (2009, p.16),

“Quantitative approach-post positivist worldview, experimental strategy of inquiry, and pre- and post-test measures of attitudes. In this scenario, the researcher tests a theory by specifying narrow hypotheses and the collection of data to support or refute the hypotheses. An experimental design is used in which attitudes are assessed both before and after an experimental treatment. The data are collected on an instrument that measures attitudes, and the information is analyzed using statistical procedures and hypothesis testing.”

This research's goal is to analyze and to describe the effect of financial leverage on firm's value and market risk on the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010-2012. The explanatory research is a research that aims to test a theory or hypothesis to strengthen or even reject the theory or hypothesis of existing research's results. According to Vanderstoep and Johnston (2009, p. 7-8),

“The quantitative research specifies numerical assignment to the phenomenon under study. The advantage of quantitative research is that the findings from the sample under study will more accurately reflect the overall population from which the sample was drawn. The disadvantage of the quantitative approach is because the study contains so many participants, the answers research partisipants are able to give do not have much depth. They have to be superficial, or else the researchers would be overwhelmed by information that cannot adequately be analyzed.”

According to Creswell (2009, p. 4), “

“Quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures. The final written report has a



set structure consisting of introduction, literature and theory, methods, results, and discussion (Creswell, 2008). Like qualitative research, those who engage in this form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling for alternative explanations, and being able to generalize and replicate the findings”.

This research explains about the effect of financial leverage on firm value and market risk. This research consists of independent variables, dependent variables, and intervening variable.

Independent variable is the variable which is systematically controlled by the researcher to determine the effect of that variable. By systematically changing the independent variable and holding all other variables constant, the researchers can be confident that any change in the dependent variable-the outcome the researchers are measuring-is actually due to the effect of the independent variable (Vanderstoep and Johnston, 2009 p. 35). The independent variable consists of Degree of Financial Leverage (DFL) (X_1) and Debt to Total Assets (DR) (X_2) on firm's value with the dependent variables consist of Earnings Per Share (EPS) (Y_1) and Return On Equity (ROE) (Y_2) and the intervening variable is market risk (Z) on the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010-2012.

4.2 Research Location

The research location is the place where the researcher conducts research to obtain the valid data, which is needed in research. The researcher also expects to analyze the actual state of the object that has been researched, including the characteristics of the location, environment and all activities therein.

The research was conducted in Indonesian Stock Exchange in University of Brawijaya. The researcher chooses this location because the companies, whose



financial statements have been audited by a public accountant and published is incorporated in the IDX that have gone public.

4.3 Population and Sample

4.3.1 Population

The term population refers to the total number of people, objects, or events that are relevant to the research aspect being studied (Riley, et al, 2000:147). The population in this research is consumer goods industries that are listed in Indonesian Stock Exchange in the year of 2010 till 2012. The researcher chooses consumer goods industries because these industries are very important in developing national industry. The condition makes the sector to be one of the choices for the investors as a promising investment. It is characterized by many consumer goods industries that go public and show that the company has considerable business, and the company can absorb labor and substantial capital investment. This research was conducted in a company that has positive ROE and EPS. Total population listed in Indonesia Stock Exchange in the year of 2010-2012 period, as many as 33 companies in the consumer goods industries. Positive equity indicates that the company can operate properly. It can also help the investors to invest in the company wisely.

4.3.2 Sample

A sample is a subset of a larger grouping. A population sample are frequently studied in order to learn something of the characteristics of the larger groups (population) of which they are part. Such sample, if



selected in certain ways can be used as a legitimate basis for drawing inferences about the populations from which they are drawn in essence, within certain boundaries, we can make claims from the samples that are generalizable to the populations of which the samples are part (Riley, et al, 2000 p. 75). The technique that used for sampling in this research is purposive sampling. The key feature of purposive sampling items chosen for a sample are not chosen randomly but purposively (Riley, et al, 2000 p. 85). The purpose of sampling in this research was to determine the financial statements of the company on the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010 till 2012. Below are the criteria that is used in the sample:

- (1) The companies issued and published annual financial statements from 2010 till 2012.
- (2) During the year of research (2010 till 2012) rate of return or refund for Earnings Per Share (EPS) should not be negative.
- (3) During the year of research (2010 till 2012), the equity of the company should not be negative.
- (4) During the year of research (2010 till 2012), Degree of Financial Leverage (DFL) should not be negative because income or earnings of companies should not be negative, the negative value will affect firm's value. The manager has to keep firm's value and minimize market risk.
- (5) During the year of research (2010 till 2012), market risk (β) of the companies should not be negative.



Table 2. Sample Selection Process

Sample Selection Criteria	Total	Accumulated
The companies issued and published annual financial statements in the year of 2010 till 2012	33	99
The companies have positive Earnings per Share (EPS) in the year of 2010 till 2012	23	69
The companies have positive equity in the year of 2010 till 2012	19	57
The companies have positive Degree of Financial Leverage (DFL) in the year of 2010 till 2012	17	51
The companies have positive market risk (β) in the year of 2010 till 2012	13	39
Total sample during observation period	13	39

Sources: secondary data (data process, 2010 till 2012)

Based on the sample selection criteria, the number of companies sampled in this study were 13 companies in the consumer goods industries selected by the researcher from population as much as 33 companies based on criteria that have been determined by the researcher. Below are the companies that used in the sample:

- (1) PT Indofood Sukses Makmur Tbk
- (2) PT Mayora Indah Tbk
- (3) PT Gudang Garam Tbk
- (4) PT Hanjaya Mandala Sampoerna Tbk
- (5) PT Kalbe Farma Tbk
- (6) PT Tempo Scan Pacific Tbk
- (7) PT Unilever Indonesia Tbk



(8) PT Akasha Wira International Tbk

(9) PT Ultajaya Milk Industry and Trading Company Tbk

(10) PT Kimia Farma (Persero) Tbk

(11) PT Darya Varia Laboratoria Tbk

(12) PT Indofarma (Persero) Tbk

(13) PT Taisho Pharmaceutical Indonesia Tbk

4.4 Data Type and Data Collection Techniques

4.4.1 Data Type

The data type used is the data in the form of financial statements, records, and documents of the company related to the research. Financial statements, records, and documents from consumer goods industries taken from Indonesian stock exchange in the year of 2010 till 2012. According to Waters (1993 p. 72), "Data are the raw number or facts which must be processed to give useful information. This book suggests that data can be any collection of facts, observations, measurements, opinions, or anything else which gives details about a situation"

4.4.2 Data Collection Techniques

The data collection technique is a way to get the appropriate data and support research undertaken. The technique that will be used in the data collection in this research is using the method of documentation. Method of documentation is finding and classifying the data in the form of financial statements, records, and documents of the company related to the research.



4.5 Research Instrument

As part of rigorous data collection, the proposal developer also provides detailed information about the actual survey instrument to be used in the proposed study. Consider the following:

- (1) Name the survey instrument used to collect data. Discuss whether it is an instrument designed for this research, a modified instrument, or an intact instrument developed by someone else.
- (2) To use an existing instrument, describe the established validity and reliability of scores obtained from past use of the instrument. This means reporting efforts by authors to establish validity – whether one can draw meaningful and useful inferences from scores on the instruments. (Creswell, 2009:149)

The instrument used in this research is comprised of documentation guidelines consisting of the necessary data of the company's financial statements.

4.6 Research Variables

According to Riley, et al (2000, p. 149), “A quantitative variable simply refers to an item of information a researcher is interested in evaluating or monitoring which can be described through one or more words and which assumes different numerical values.” Another opinion said variables are constructs that can take on two or more distinct values (this is opposed to a constant, which always takes on the same value) (Vanderstoep and Johnston, 2009: 106). In this research, there are three types of variables: independent variables, extraneous variable, and the dependent variable. According to Vanderstoep and Johnston, (2009:35), “Independent variable is the variable that is systematically controlled by the researcher to determine the effect of the variable. By systematically changing the independent variable and holding all other variables constant, the researchers can be confident that any change in the



dependent variable the outcome the researchers are measuring is actually due to the effect.”

The dependent variable is the outcome measure in which researchers are interested. In correlational research, the dependent variable is sometimes called a criterion variable (Vanderstoep and Johnston, 2009, p. 108). Another opinion said the dependent variable is as its name suggests a variable which is identified as having a relationship or dependence on the value of one or more independent variables (Riley, et al, 2000: 150). The extraneous variable is a rival explanatory variable that could also explain the relationship between the independent and dependent variables. The presence of an extraneous variable makes it difficult to make claims about the relationship between the independent and dependent variable (Vanderstoep and Johnston, 2009, p. 109).

In this research, there are two types of independent variables that affect the dependent variables and the intervening variable. The independent variables in this research are the *Degree of Financial Leverage (DFL) (X1)* and *Debt to Total Assets (DR) (X2)* that affect the dependent variables are *Earning Per Share (EPS) (Y1)* and *Return On Equity (ROE) (Y2)* and the extraneous variable or intervening variable is *market risk (Z)* of the company in the consumer goods industries in the year of 2010 till 2012.

4.7 Operational Variable and Definitions

4.7.1 Degree of Financial Leverage (DFL) (X1)

Financial leverage or debt is an integral part of *financial planning* of a company. In a business, a *leverage* is obtained not only on the fund for production but it is also taken to increase the profit for



shareholders. Using of debt and leverage can result to increasing *Return on Equity (ROE)* and *Earning per Share (EPS)* up to a certain level of operating income. The *degree of financial leverage (DFL)* can be computed more easily as follows:

$$\text{Degree of Financial Leverage} = \frac{\text{Earnings Before Interest and Tax}}{\text{Earning Before Tax}}$$

(Gibson, 2009 p. 336)

4.7.2 Debt to Total Assets (DR) (X2)

The company's debt ratio can be seen by using Debt to Total Assets or Debt Ratio (DR), DR is also called the ratio of total debt. Using of Debt to Total Assets (DR) as an independent variable is to investigate the acquisition of the ratio of total debt divided by total assets of the company. Leverage ratio can be calculated by using the formula:

$$\text{Total Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

(Brealey, Myres, Marcus, 2001 p. 138)

4.7.3 Earnings Per Share (EPS) (Y1)

EPS is the amount of income earned on a share of common stock during an accounting period applied only to common stock and to corporate income statements. Computing earnings per share initially involves net income, preferred stock dividend declared and accumulated, and the weighted average number of shares outstanding, as follows:



$$\text{Earnings per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Number of Common Shares Outstanding}}$$

(Gibson, 2009 p. 338)

4.7.4 Return On Equity (ROE) (Y2)

When associated with the source of funding, *Return On Equity* (ROE) is an measurement exactly, because *return on equity* is the result of the return on company's equity to measure the return earned on the book value. In a business, a *leverage* is obtained not only on the fund for production but it is also taken to increase the profits accruing to the company. Using *leverage* in the capital structure will not have impact on the sales, operating profits, but it will increase the share of the equity shareholders or *Return on Equity* (ROE). ROE is usually measured as:

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Total Equity}}$$

(Ross, Westerfield, Jaffe, 2008 p. 53)

4.7.5 Market Risk (Z)

Market risk is a unique risk because it can be eliminated by diversification. The factors that systematically affect most firms are war, inflation, recessions, and high interest rates. Because most stocks are negatively affected by these factors, market risk cannot be eliminated by diversification. Risk depends on exposure to macroeconomic events and can be measured as the sensitivity of a stock's returns to fluctuations in returns on the market portfolio. This sensitivity is called the stock's beta. Market risk can be measured with Beta (β).



$$\beta = \frac{\text{Cov}(R_i - R_M)}{\sigma^2(R_M)}$$

(Husnan, 1990 p. 139-140)

Another essential aspect to appreciate prior to embarking on any kind of statistical analysis is that variables assume different levels or scales. These are generally referred to in order of importance as nominal, ordinal, interval, and ratio scales. Nominal is the least sophisticated while interval and ratio are the highest. Depending on the level a particular set of data assumes so different types of statistical tests and measures are applicable (Riley, et al, 2009, p. 150)

Table 3. Concept and Indicator

Concept	Variable	Indicator
Financial Leverage	Degree of Financial Leverage (DFL) (X1)	Earnings Before Interest and Tax Earning Before Tax
	Debt to Total Assets (DR) (X2)	Total Liabilities Total Assets
Firm Value	Earnings Per Share (EPS) (Y1)	Net Income – Preferred Dividends Weighted Average Number of Common Shares Outstanding
	Return On Equity (ROE) (Y2)	Net Income Total Equity
Risk	Market Risk (Z)	$\beta = \frac{\text{Cov}(R_i - R_M)}{\sigma^2(R_M)}$

4.8 Data analysis Method

Data analysis was performed after the data needed by researcher had been obtained. The data obtained are grouped and reduced based on the variables used in the research. Then, the researcher did the calculations to answer the research questions and performed a test on the validity of the hypothesis. In this research, the analysis of the data required are as follows:



4.8.1 Descriptive Statistics Analysis: Central Tendency and Spread

This research is expected to simplify the meaning of the data obtained and the results can be concluded from the results of these calculations. According to Vanderstoep and Johnston (2009 p. 92),

“The most common measure of central tendency is **the mean**: the arithmetic average of a set of numbers. Means is important for descriptive studies because they provide information about the average participant's score on a measure. The other two measures of central tendency are the mode, the most frequently occurring number in a dataset; and **the median**, the middle score of numbers in a data set. (With an odd number of observations, the middle score is the median; with an even number of observations, most people and computer programs select the average of the two middle score as the median)”.

4.8.2 Inferential Statistic Analysis: understanding statistical significance

Inferential statistics are statistics used to draw conclusions about significant relationships among variables (Vanderstoep and Johnston, 2009:94). The researcher used inferential statistics for processing research data. The researcher involved some test data with SPSS.

4.9 Test of Assumptions

4.9.1 Path Analysis

This research uses path analysis with three variables consist of the independent variable, the dependent variable and the intervening variable. According to Ghozali (2012 p. 249),

“Influence of the intervening variable or the extraneous variable can be tested by using path analysis. Path analysis is an extension of the multiple linear regression analysis or the use of regression analysis to estimate the causal relationship



among variables (casual model) predetermined by the theory. Path analysis cannot determine causality and cannot be used as a substitute by the researchers to see the causal relationship among variables. Causality among variables has been established with a model based on a theoretical foundation. Path analysis is used to determine the relationship among three or more variables and cannot be used to confirm or reject the hypothesis of causality imaginary”.

4.9.2 Normality Test

Normality test aims to test whether the regression model, the independent variables and the dependent variables have a normal distribution or not. To avoid bias, the data used must be distributed normally. A good regression model has a normal data or near-normal. In this research, test of the data normality uses one-Simonov Kolmogorov sample test. The variables in the tests have value Asymp. Sig (2-tailed) with a significance probability below 0.05 (probability <0.05) means that these variables were not normally distributed. In addition to using a one sample kolmogorov simonov test, normality research data can be tested by using analysis of histogram graph. If the histogram graph shows a normal distribution pattern, then the regression model meets the assumptions of normality. A good regression model is the data distributed normally. (Ghozali, 2011 p. 160)

4.9.3 Multicolinearty Test

Multicolinearity test aims to test whether the regression model finds a correlation among the independent variables. There should not be a correlation among the independent variables in a good regression model. If the independent variables are correlated, then these variables are not orthogonal. Orthogonal variables are independent variables, whose value correlation among fellow independent variables is equal to



zero. To detect the presence or absence of multicollinearity in the regression model, the following explanations are used:

- (a) Analyze the correlation matrix of the independent variables. If the correlation among the independent variables is quite high (generally above 0.90), then this is an indication of multicollinearity. The lack of a high correlation among the independent variables does not mean free from multicollinearity. Multicollinearity can be caused by the effect of combination of two or more independent variables.
- (b) Multicollinearity can also be seen from (1) the value of tolerance and the opponent and (2) the variance inflation factor (VIF). Both of these measurements indicate, which independent variables are explained by other independent variables. When viewed from the tolerance and VIF, the cutoff value commonly used to indicate multicollinearity is tolerance value ≤ 0.10 or value of VIF ≥ 10 (Ghozali, 2012 p. 105).

4.9.4 Autocorrelation Test

Autocorrelation test is aimed to test whether there is a correlation among the bullies error on t period with the bullies error on t-1 period (previous) in the regression model. If there is a correlation, then there is a problem called autocorrelation. There are several ways for detecting the presence of autocorrelation in certain situations, such as trial of Durbin Watson (DW test). DW method produces a value of 0 to 4. In this research, the DW values are obtained by using SPSS. The hypothesis to be tested is:

H0: no autocorrelation ($r = 0$)

HA: there is autocorrelation ($r \neq 0$)

Decision making in indicating the presence of autocorrelation are:



Table 4. Decision Correlation Test

Zero hypothesis	Decision	Information
No positive autocorrelation	Decline	$0 < d \leq dl$
No positive autocorrelation	No decision	$dl \leq d \leq du$
No negative correlation	Decline	$4 - dl < d < 4$
No negative correlation	No decision	$4 - du \leq d \leq 4 - dl$
There is no autocorrelation, positive or negative	No Decline	$du < d < 4 - du$

(Ghozali, 2012 p. 111)

To test whether there is or no autocorrelation in the regression model is when the value of Durbin and Watson is equal to $1 < DW > 3$ (Sarwono, 2012).

4.9.5 Heteroscedasticity Test

Heteroscedasticity test aims to test whether there is a variance dissimilarity from residual of one observation to another. If the variance from residual of one observation to another observation fixed, it is then called homoskedastisitas. If different, it is called heteroscedasticity. A good regression model is homoskedastisitas (Ghozali, 2012).

4.9.6 Hypothesis Testing

Hypothesis testing is done statistically by looking at the significant test (real effect) from independent variables (X_1 and X_2) to the dependent variable (Y_1 and Y_2) with the intervening variable (Z).

a. Hypothesis Test

The steps to be performed for testing the hypothesis by using multiple linear regression are as follows:

- (1) F test (Simultaneous Test), is used to test whether the independent variables jointly affect the dependent variables (Ghozali, 2011 p. 98).



Accept H_0 if $F_{\text{count}} < F_{\text{table}} (\alpha = 0.05)$

Accept H_a if $F_{\text{count}} > F_{\text{table}} (\alpha = 0.05)$

According to Siegel (1987 p. 12)

Accept H_0 if $F_{\text{count}} < F_{\text{table}} (\alpha = 0.10)$

Accept H_a if $F_{\text{count}} > F_{\text{table}} (\alpha = 0.10)$

(2) t test (Partial Test), which is to test whether the independent variables individually affect the dependent variable (Ghozali, 2011 p. 98).

Accept H_0 if $t_{\text{count}} < t_{\text{table}} (\alpha = 0.05)$

Accept H_a if $t_{\text{count}} > t_{\text{table}} (\alpha = 0.05)$

According to Siegel (1987 p. 12)

Accept H_0 if $t_{\text{count}} < t_{\text{table}} (\alpha = 1.64)$

Accept H_a if $t_{\text{count}} > t_{\text{table}} (\alpha = 1.64)$

b. Coefficient of Determination

The coefficient of determination (R^2) is used to measure how far the model's ability can explain variation in the dependent variables. The determination coefficient is between zero and one. Small R^2 value indicate that the ability of the independent variables in explaining the variation in the dependent variables is very limited. R^2 value that approaching 1 implies that the independent variables give almost all the information needed to predict the variation in the dependent variables (Ghozali, 2011).



CHAPTER V

RESULT AND DISCUSSION

5.1 Description of Research Location

5.1.1 History of Indonesian Stock Exchange

Before Indonesia gained its independent, the capital market was established. In 1912 a stock exchange was first built in Batavia, Indonesia during the Dutch's occupation. At the time, the exchange was aimed to be built for the interest of the Dutch East Indies (VOC).

During the hardship, the capital market had its ups and downs. It had its glorious time and also had its pause for quite some time because of the World War I and II. It was reactivated 1977 and has developed ever since, supported by the government's incentives and regulations (<http://www.idx.co.id/Home>).

5.1.2 Vision Of Indonesian Stock Exchange

Indonesian Stock Exchange wants to become an Acknowledge and Credible World-Class Exchange (<http://www.idx.co.id/Home>).

5.1.3 Missions Of Indonesian Stock Exchange

There are two missions which Indonesian Stock Exchange try to create:

1. Creating a competitive edge to attract investors and listed companies through the empowerment of stock exchange members and participants.
2. Creating value-added, cost efficiency and the implementation of good governance (<http://www.idx.co.id/Home>).

5.1.4 Program of Indonesian Stock Exchange

There are four programs in Indonesian Stock Exchange, are:

1. Educational Program
2. Indonesian Stock Exchange Corner
3. Capital Market Information Center (CMIC)
4. Indonesia Capital Market Electronic Library (ICaMEL)
(<http://www.idx.co.id/Home>).

5.1.5 Corporate Governance

Corporate Governance is a system designed to direct the management of the company in a professional manner based on the principles of transparency, accountability, responsibility, independence, fairness and equality. IDX as a facilitator and regulator of capital markets in Indonesia has a commitment to become the Stock Exchange of global competitive (<http://www.idx.co.id/Home>).

5.1.6 Product and Services of Indonesian Stock Exchange

There are five products and services of Indonesian Stock Exchange, are:

1. Equities
2. Bonds
3. Derivatives
4. Mutual Funds
5. Sharia (<http://www.idx.co.id/Home>).

5.2 Overview of Companies Applied as The Sample

1. Name of Company : PT Indofood Sukses Makmur Tbk



Code : INDF

Businesses : Establishing and operating processed food, seasoning, beverages, packaging, cooking oil, wheat grain mills and flour sacks textile manufacturing.

Address : Jendral Sudirman Street, Kav 76-78, Jakarta, Sudirman Plaza, Indofood Tower, 27th Floor.

The First Operation : 1990

2. Name Of Company : PT Mayora Indah Tbk

Code : MYOR

Businesses : The scope of its activities is to engage in manufacturing, trading and agency. At present, the Company is engaged in the manufacture of food, candies and biscuits. The Company sells its products both in domestic and foreign markets.

Address : Mayora building, Tomang Raya Street No. 21-23, Jakarta

The First Operation : 1978

3. Name Of Company : PT Gudang Garam Tbk

Code : GGGM

Businesses : Producing cigarette and others related to cigarette

Address : Semampir Street III/I, Kediri, East Java

The First Operation : 1958

4. Name Of Company : PT HANjaya Mandala Sampoerna Tbk

Code : HMSP



Businesses : The scope of activities of the Company comprises manufacturing and trading of cigarettes and investing in other companies.

Address : Rungkut Industri Raya Street, No.18, Surabaya, East Java

The First Operation : 1913

5. Name Of Company : PT Kalbe Farma Tbk

Code : KLBF

Businesses : The company comprises among others pharmaceutical trading and representative. Currently, the company is primarily engaged in the development, manufacturing and trading of pharmaceutical preparation including medicines and consumer health products.

Address : Letjen Suprpto Street Kav. 4, Cempaka Putih, Kalbe Building, Jakarta

The First Operation : 1966

6. Name Of Company : PT Tempo Scan Pacific Tbk

Code : TSPC

Businesses : The scope of activities is pharmaceutical business.

Address : H.R Rasuna Said Street, Kav 3-4, Tempo Scan Tower at 16th Floor, Jakarta.

The First Operation : 1970

7. Name Of Company : PT Unilever Indonesia Tbk



Code : UNVR

Businesses : The Company is engaged in the manufacturing, marketing and distribution of consumer goods including soaps, detergents, margarine, dairy based food, ice cream, cosmetic products, tea based beverages and fruit juice.

Address : Jendral Gatot Subroto Street, Kav. 15, Jakarta.

The First Operation : 1933

8. Name Of Company : PT Akasha Wira International Tbk

Code : ADES

Businesses : The company's articles of association, the scope of its activities consists of drinking water bottling industry, bread and cake industry, candy, macaroni, cosmetic industry and wholesaling. The Company is engaged in the drinking water bottling and cosmetic products manufacturing and distribution.

Address : T.B Simatupang street, Kav. 88, Jakarta

The First Operation : 1986

9. Name Of Company : PT Ultajaya Milk Industry and Trading Company Tbk

Code : ULTJ

Businesses : The Company engages in the food and beverage industry. In the beverage section the Company produces various beverages like milk, fruit juices,



tea, traditional drink and health drink, that are manufactured with the UHT (Ultra High Temperature) technology, and packaged in aseptic packaging material. In the food section the Company produces sweetened condensed milk, powder milk, and tropical fruit juice concentrate.

Address : Raya Cimareme Street No. 131 PAdalarang,

Bandung

The First Operation : 1974

10. Name Of Company : PT Kimia Farma (Persero) Tbk

Code : KAEF

Businesses : Providing goods and services of high quality and strong competitive especially in the chemical industry, pharmacy, biology, health, food and beverage industry

Address : Veteran Street, No 9 Jakarta

The First Operation : 1817

11. Name Of Company : PT Darya Varia Laboratoria Tbk

Code : DVLA

Businesses : The Company is engaged in the manufacture, trade, services and distribution of pharmaceuticals and related chemicals and health care products. Currently, the Company is



active in the manufacture, trade and services of pharmaceutical products.

Address : Bogor and Jakarta

The first operation : 1976

12. Name Of Company : PT Indofarma (Persero) Tbk

Code : INAF

Businesses : The Company may engage in the following activities:

- Producing pharmaceutical raw and indirect materials, and chemical materials including agrochemical by itself or under license or contract with other parties
- Producing finished goods such as essential medicine, generic medicine, branded medicine, traditional medicine, cosmetics, medical devices, diagnostics and contraceptives. The Company also produces food products or those related with health care and health improvement including animal food products. The Company produces such goods by itself or under license or contract with other parties
- Producing packaging materials, machinery and equipment and infrastructure related to pharmaceutical industry or other industries



Address : Indofarma Street, No.1 Cibitung, Bekasi.

The first operation : 1983

13. Name Of Company : PT Taisho Pharmaceutical Indonesia Tbk

Code : SQBI

Businesses : The Company's activities are to develop, register, process, produce and sell chemical, pharmaceutical and health care products

Address : Wisma Tamara 10th floor, Jenderal Sudirman Street, Kav. 24, Jakarta 12920.

The first operation : 1972

5.3 The Result of The Research

5.3.1. Comparative Research Variables Over 3 Years Period

(1) *Degree of Financial Leverage (DFL)*

Degree of Financial Leverage (DFL) is used for calculating *Financial Leverage*. DFL measurements can use the following formula:

$$\text{Degree of Financial Leverage} = \frac{\text{Earnings Before Interest and Tax}}{\text{Earning Before Tax}}$$

(Gibson, 2009: 336)

If the results obtained from the formula *Degree of Financial Leverage (DFL)* increases, so the *Degree of Financial Leverage* will also increase.

The high *financial leverage* comes from the fixed financial obligations of the company. Therefore, a company's financial managers have to consider the best among the risk with high *financial leverage*. Here is the



Degree of Financial Leverage (DFL) data from the sample of company that is researched:

Table 5. Degree of Financial Leverage in the year of 2010-2012

No	Code Of Company	Year		
		2010	2011	2012
1	INDF	1.23	1.32	0.94
2	MYOR	1.15	1.35	1.05
3	GGRM	1.04	1.08	1.48
4	HMSP	1.65	2.28	21.21
5	KLBF	1.32	1.40	0.84
6	TSPC	1.11	1.28	0.93
7	UNVR	2.99	2.87	5.48
8	ADES	1.17	2.62	3.67
9	ULTJ	0.18	1.45	3.99
10	KAEF	1.14	0.46	1.97
11	DVLA	0.97	0.54	1.03
12	INAF	0.91	1.44	1.64
13	SQBI	1.60	1.83	0.68

Source: Processed Data (2014)

Based on the table 5, the company that has the highest value of *Degree of Financial Leverage* in the year of 2010 is PT Unilever Indonesia Tbk reaching 2.99. The value of *DFL* this year due to the increasing value of *EBIT* is 0.018, followed by an increase in *EPS* reaching 0.054. PT Unilever Indonesia Tbk in the year of 2011 decreased to 2.87. In the year of 2012, the value of *Degree of Financial Leverage* increased to 5.48. The value of 5.48 or 548 % means that every percentage of change of *EBIT* from base year will create earnings for shareholders as much as 5.48. In other words, increasing *EBIT* amounted 10 % will cause increasing earning for shareholders of as



much as $10\% \times 548 = 5480$. Decreasing *EBIT* of as much as 10% will make earning for shareholder decrease of as much as $10\% \times 548 = 5480$.

Changes in *EBIT* of a company will affect *financial leverage*. A small increase in *EBIT* will result to the increase of profits for shareholders significantly. A small decrease in *EBIT* will result to the large decrease for shareholders relatively. A low level of *financial leverage* would result in a small increase in income and will be a small increase in *EBIT* and vice versa will result in a relatively small loss of a decrease in *EBIT*. The size of the resulting *EBIT* will affect the company's *EPS*. The change of *EBIT* will affect *EPS* and *ROE*. Due to changes of *EBIT* will affect *earnings after tax (EAT)*, which is used to calculate the magnitude of the resulting *ROE* of company.

(2) Debt to Total Assets (DR)

Debt to Total Assets (DR) is used to find the ratio of corporate debt. *DR* is also called the ratio of total debt. *Debt to Total Assets (DR)* can be calculated using the formula:

$$\text{Debt to Total Assets} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

(Brealey, Myres, Marcus, 2001:138)

Using high leverage will harm the company because the company will go into extreme leverage. Here is the *DR* data from the sample that is researched.



Table 6. Debt to Total Assets (DR) in the year of 2010-2012

No	Code Of Company	Year		
		2010	2011	2012
1	INDF	0.47	0.71	0.41
2	MYOR	0.54	0.50	0.42
3	GGRM	0.31	0.37	0.36
4	HMSP	0.15	0.44	0.49
5	KLBF	0.18	0.21	0.22
6	TSPC	0.26	0.28	0.28
7	UNVR	0.69	0.65	0.63
8	ADES	0.54	0.31	0.46
9	ULTJ	0.35	0.38	0.31
10	KAEF	0.33	0.30	0.60
11	DVLA	0.25	0.21	0.22
12	INAF	0.58	0.45	0.45
13	SQBI	0.16	0.16	0.18

Source: Processed Data (2014)

Using fixed costs in a company can provide a positive or negative influence depends on how the manager manages his fixed costs so that shareholders can earn a profit from using these funds. Based on table 6, the company that has the highest value of Total Debt to Total Assets (DR) in the year of 2010 is PT Unilever Indonesia Tbk reaching 0.69, Total Debt to Total Assets value of PT Unilever Indonesia Tbk showed that the total assets of the company is amounted to 0.69 or 69 % financed with debt. A high ratio indicates a low proportion of equity capital to finance assets. The higher this ratio, the greater the risks faced. PT Unilever Indonesia Tbk in the year of 2011 decreased to 0.65, and in the year of 2012, the value of Total Debt to Total Assets (DR) decreased again up to 0.63. In 2010, the company to having the lowest Total Debt to



Total Assets (DR) is PT Hanjaya Mandala Sampoerna Tbk reaching 0.15 or 15 %, then in the year of 2011 it increased to 0.44. In 2012, it increased again up to 0.49. In other words, if the company has a higher debt, it will improve the value of Total Debt to Total Assets (DR).

(3) *Earnings Per Share (EPS)*

Earnings Per Share (EPS) is used to determine the success of a company because it is used to determine the amount of dollars earned for each share of common stock. *Earnings Per Share (EPS)* can be calculated using the formula:

$$\text{Earnings per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Number of Common Shares Outstanding}}$$

(Gibson, 2009: 338)

The following is the data of *Earnings Per Share* from the sample of company which is researched.

Table 7. Earnings per Share (EPS) in the year of 2010 – 2012

No	Code Of Company	Year		
		2010	2011	2012
1	INDE	336	952	44
2	MYOR	631	614	350
3	GGRM	122	41.71	546
4	HMSF	1465	1840	12063
5	KLBF	137	158	37
6	TSPC	109	126	140
7	UNVR	444	2086	13439
8	ADES	54	371	141
9	ULTJ	37	35	9105
10	KAFF	24.98	30.93	2544



No	Code Of Company	Year		
		2010	2011	2012
11	DVLA	134	143	175
12	INAF	4.05	11.93	13.68
13	SQBI	2155	2269	36.93

Source: Processed Data (2014)

Based on the table 7, the company that has the highest value of *Earnings Per Share (EPS)* in 2010 is PT Taisho Pharmaceutical Indonesia Tbk reaching 2155. Then, in the year of 2011 it increased to 2269. In 2012 it decreased to 36.93. In 2010 and 2011, the company that had the highest value of *Earnings Per Share (EPS)* PT Taisho Pharmaceutical Indonesia Tbk. *Earnings Per Share* showed the condition of the company whether it was good or bad. The higher the *EPS* of the company, the better value of company will be. This suggests that PT Taisho Pharmaceutical Indonesia Tbk has a value of a good company. In the year of 2010, the company that had the lowest value of *Earnings Per Share* was PT Indofarma (Persero) Tbk reaching 4.05. Then in the year of 2011 it increased to 11.93. In the year of 2012 it increased to 13.68.

(4) Return On Equity (ROE)

Return On Equity (ROE) is used to determine income for the owners of the company (both ordinary shareholders and preferred shareholders) on the capital which they invest in the company. *Return On Equity (ROE)* can be calculated using the formula:

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Total Equity}}$$

(Ross, Westerfield, Jaffe, 2008: 53)



The higher of *Return On Equity*, the higher the return will be generated.

Here is the data of *Return On Equity* from the sample of companies that is researched.

Table 8: Return on Equity (ROE) In the Year of 2010-2012

No	Code Of Company	Year		
		2010	2011	2012
1	INDF	0.94	0.96	0.23
2	MYOR	0.25	0.21	0.25
3	GGRM	0.63	0.20	0.15
4	HMSP	0.20	0.25	1.13
5	KLBF	0.25	0.40	0.24
6	TSPC	0.19	0.20	0.19
7	UNVR	0.21	0.75	1.22
8	ADES	0.32	0.21	0.23
9	ULTJ	0.08	0.10	0.84
10	KAEF	0.13	0.14	0.14
11	DVLA	0.17	0.17	0.18
12	INAF	0.04	0.06	0.07
13	SQBI	0.34	0.40	0.42

Source: Processed Data (2014)

Based on the table 8, the company that has the highest value of *Return on Equity (ROE)* in the year of 2010 is PT Indofood Sukses Makmur Tbk reaching 0.94 or 94%. In the year of 2011 it increased to 0.96 or 96 %. In 2012 it decreased to 0.23 or 23 %. The greater of *Return On Equity* that is generated by the company, the more interested the investors will be to invest in the company and the better the value of



the company because it has a great advantage. The company that has the lowest value of *Return On Equity (ROE)* in the year of 2010 is PT Indofarma (Persero) Tbk reaching 0.04 or 4 %. Then, in the year of 2011 it increased to 0.06 or 6 % and then in the year 2012 decreased is equal to 0.07 or 7 %. Increasing of *Return on Equity* from the sample of companies is due to the change of profit after tax from the company that affects *Return on Equity (ROE)* obtained.

(5) Market Risk (β)

Market Risk is also referred to as *systematic risk* or *non-diversifiable risk*. In this research the *systematic risk* that is affected by change in interest rates, monetary policy, government spending, foreign exchange rates, oil prices, and other macroeconomic events affects almost all companies and the returns on almost all stocks. If the market is up on a particular day, then the net impact of macroeconomic changes must be positive. The following table demonstrates the data of *Market Risk (β)* from the sample of companies that is researched.

Table 9. Market Risk (β)

No	Code Of Company	Year		
		2010	2011	2012
1	INDF	0.75	0.85	0.47
2	MYOR	0.57	0.47	0.24
3	GGRM	0.37	0.55	0.55
4	HMSP	0.08	0.46	1.10
5	KLBF	0.66	0.36	0.19
6	TSPC	0.17	0.43	0.28
7	UNVR	0.39	0.63	1.49
8	ADES	0.43	0.39	0.60

No	Code Of Company	Year		
		2010	2011	2012
9	ULTJ	0.004	0.60	0.78
10	KAEF	0.31	0.50	0.98
11	DVLA	0.52	0.20	0.01
12	INAF	0.49	0.41	0.50
13	SQBI	0.25	0.21	0.14

Source: Processed Data (2014)

Based on the table 9, the company that has the highest value of market risk (β) in 2010 was PT Indofood Sukses Makmur Tbk reaching 0.75 or 75 %. Then, in 2011 it increased to 0.85 or 85 %. In the year of 2012 it decreased to 0.47 or 47 %. Stock with a beta greater than 1 is referred to as an aggressive stock, while having a beta of less than 1 is referred to as defensive stocks. For aggressive stocks, if there is a change (increase or decrease) in the advantages rate of market portfolio as much as 10%, then the rate of profit shares is changed in the same direction as much as 10% and vice versa for defensive stocks. According to Brealey, et al (2001, p. 409), "Aggressive stocks amplify any market movements. If the market goes up, it is good to be in aggressive stocks; if it goes down, it is better to be in defensive stocks (and better still to have your money in the bank). Aggressive stocks have high betas, betas greater than 1.0, meaning that their returns tend to respond more than one-for-one to changes in the return of the overall market."

5.3.2 Descriptive Statistics Analysis

The result of descriptive statistics of research variables is presented in Table 9. This research is expected to simplify the meaning of the data obtained and the results can be concluded from the result of these calculations.



Table 10. Descriptive Statistics Of Consumer Goods Industries Companies
Listed on the Indonesian Stock Exchange in the period 2010 – 2012

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
DFL	39	0.18	21.21	2.0838	3.30888
DR	39	0.15	0.71	0.3799	0.15887
ROE	39	0.04	1.22	0.3348	0.30298
EPS	39	1.40	9.51	5.4280	1.96172
Market risk	39	0.00	1.49	0.4710	0.29596
Valid N (listwise)	39				

Table 10 shows the descriptive statistic variables of research with the number of valid data for each variable with 39 observations, which is the number of sample companies over the period of 2010 until 2012. A description of each variable is as follows:

(1) Degree Of Financial Leverage (DFL)

During the research period, the mean value of *Degree of Financial Leverage (DFL)* is equal to 2.0838. In the year 2012, PT Hanjaya Mandala Sampoerna Tbk had the maximum value of *Degree of Financial Leverage (DFL)* reaching 21.21. Meanwhile, in the year of 2010 at PT Ultrajaya Milk Industry and Trading Company Tbk had the minimum value of *Degree of Financial Leverage (DFL)* reaching 0.18. The standard deviation of *Degree of Financial Leverage (DFL)* is equal to 3.30888.



(2) *Debt to Total Assets (DR)*

During the research period, the mean value of *Debt to Total Assets (DR)* is equal to 0.3799. In 2011 PT Indofood Sukses Makmur Tbk had the maximum value of *Debt to Total Assets (DR)* reaching 0.71. Meanwhile, in the year of 2010 PT Hanjaya Mandala Sampoerna Tbk had the minimum value of *Debt to Total Assets (DR)* reaching 0.15. The standard deviation of *Debt to Total Assets (DR)* is equal to 0.15887.

(3) *Return On Equity (ROE)*

During the research period, the mean value of *Return on Equity (ROE)* is equal to 0.3348. In the year of 2012, PT Unilever Indonesia Tbk had the maximum value of *Return on Equity (ROE)* reaching 1.22. Meanwhile, in the year of 2010 PT Indofarma (Persero) Tbk had the minimum value of *Return on Equity (ROE)* reaching 0.04. The standard deviation of *Return on Equity (ROE)* is equal to 0.30298.

(4) *Earnings Per Share (EPS)*

During the research period, the mean value of *Earnings Per Share (EPS)* is equal to 5.4280. In the year of 2012, PT Unilever Indonesia Tbk had the maximum value of *Earnings Per Share (EPS)* reaching 9.51 or Rp 13439,00. Meanwhile, in the year of 2010, PT Indofarma (Persero) Tbk had the minimum value of *Earnings Per Share (EPS)* reaching 1.40 or Rp 4.05,00. The standard deviation of *Earnings Per Share (EPS)* is equal to 1.96172.

(5) *Market risk (β)*

During the research period, the mean value of *market risk (β)* is equal to 0.4710. In the year of 2012, PT Unilever Indonesia Tbk had the



maximum value of *market risk* (β) reaching 1.49. Meanwhile, in the year of 2010, PT Ultrajaya Milk Industry and Trading Company had the minimum value of *market risk* (β) reaching 0.004. The standard deviation of *market risk* (β) is equal to 0.36257.

5.3.3 Inferential Statistical Analysis

5.3.3.1 Results of Testing Classical Assumptions

Classical Test assumptions in this research will be done in four trials, namely: Normality Test, Autocorrelation Test, Multikolineritas Test, and Heteroskedastisitas Test.

(1) The Result Of Normality Test

Normality test aims to test whether the regression model the independent variables, and the dependent variable have a normal distribution. In addition to use one sample of kolmogorov-smirnov test, normality research data can be tested by using analysis of histogram graph. If the histogram graph shows a normal distribution pattern, then the regression model will meet the assumptions of normality. A good regression model is the data distributed normally (Ghozali 2011:160). Charts and graphs of normal histogram plots for normality test are as follows:

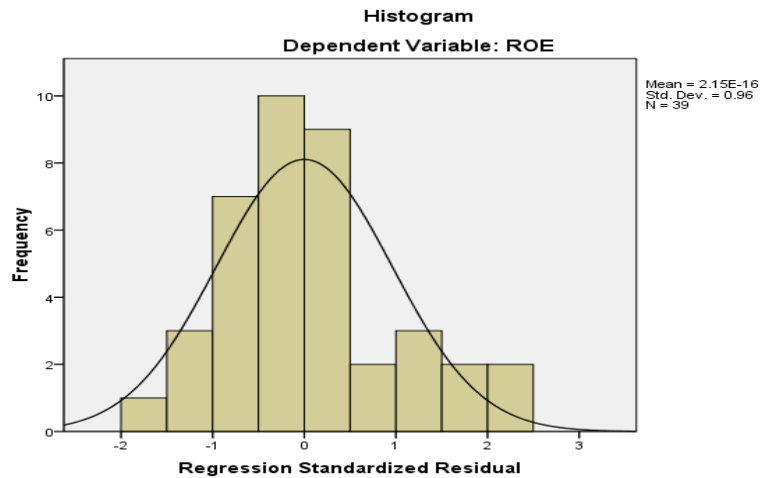


Figure 3. The effect of financial leverage on ROE Histogram graph of the consumer goods industries registered in Indonesian Stock Exchange in the year of 2010-2012

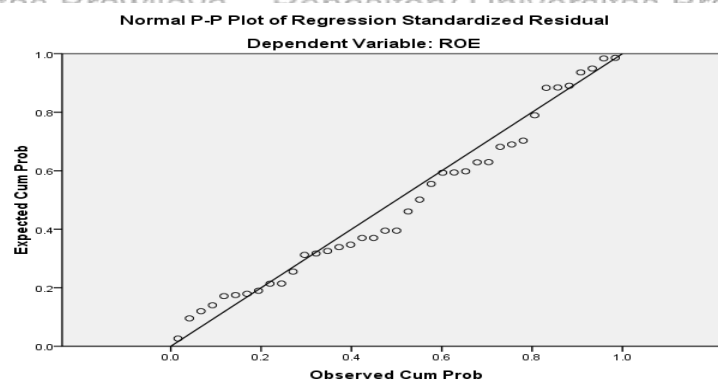


Figure 4. Normal P-P Plot graphic of the consumer goods industries on ROE registered in Indonesia Stock Exchange in the year of 2010-2012

Based on the figure 3 and figure 4, it is shown that the results of normality test using histogram graphic analysis and normal plot graphic, is the normal distribution pattern which is close to normal. Therefore, we can see dots spreaded around the diagonal line in the graphic. In order to ensure



whether residual data is distributed normally or not, we can perform a sample of Kolmogorov-Smirnov test.

Table 11. The result of Kolmogorov-Smirnov test on consumer goods industries on ROE registered in Indonesian Stock Exchange in the year of 2010 till 2012

One-Sample Kolmogorov-Smirnov Test			Unstandardized Residual
N			39
Normal Parameters ^{a,b}	Mean		.0000000
	Std. Deviation		.21553024
Most Extreme Differences	Absolute		.122
	Positive		.122
	Negative		-.072
Kolmogorov-Smirnov Z			.762
Asymp. Sig. (2-tailed)			.608

a. Test distribution is Normal.

b. Calculated from data.

The results of Kolmogorov-Smirnov test in table 11 shows asymptotic significance value greater than 0.05 which is 0.608. This value reflects that the regression model used has meet the assumptions of normality.

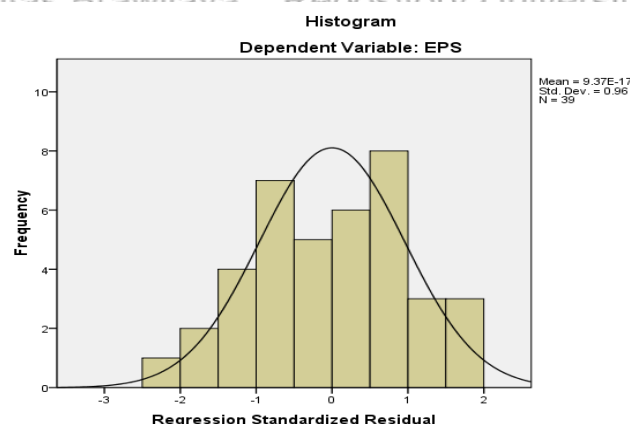


Figure 5. The effect of financial leverage on EPS

Histogram graph of the consumer goods industries registered in Indonesian Stock Exchange in the year of 2010-2012

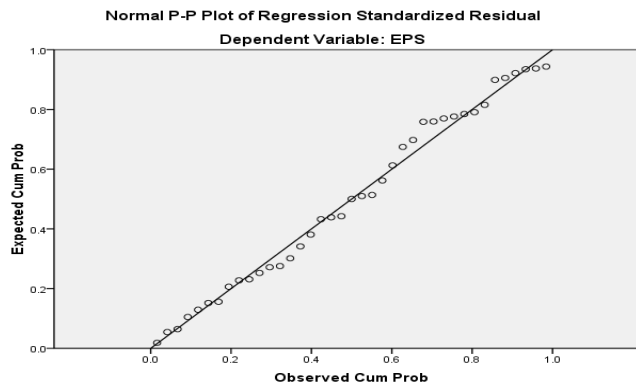


Figure 6. Normal P-P Plot graphic of the consumer goods industries on EPS registered in Indonesia Stock Exchange in the year of 2010-2012

Based on the figure 5 and figure 6, it is shown that the results of normality test using histogram graphic analysis and normal plot graphic, is the normal distribution pattern which is close to normal. Therefore, we can see dots spreaded around the diagonal line in the graphic. In order to ensure whether residual data is distributed normally or not, we can perform a sample of Kolmogorov-Smirnov test.



Table 12. The result of Kolmogorov-Smirnov the companies of consumer goods industries on EPS registered in Indonesian Stock Exchange in the year of 2010-2012

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		39
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.60050920
Most Extreme Differences	Absolute	.101
	Positive	.066
	Negative	-.101
Kolmogorov-Smirnov Z		.631
Asymp. Sig. (2-tailed)		.821

a. Test distribution is Normal.

b. Calculated from data.

The result of Kolmogorov-Smirnov test in table 12 shows asymptotic significance value greater than 0.05 which is 0.821. This value reflects that the regression model used has meet the assumptions of normality.

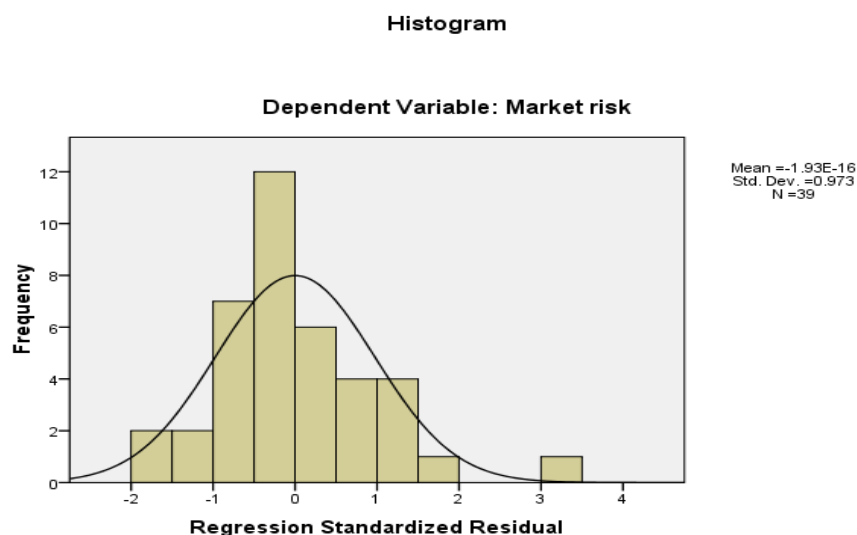


Figure 7. The effect of financial leverage on Market Risk (β)



Histogram graph of the consumer goods industries registered in
Indonesian Stock Exchange in the year of 2010-2012

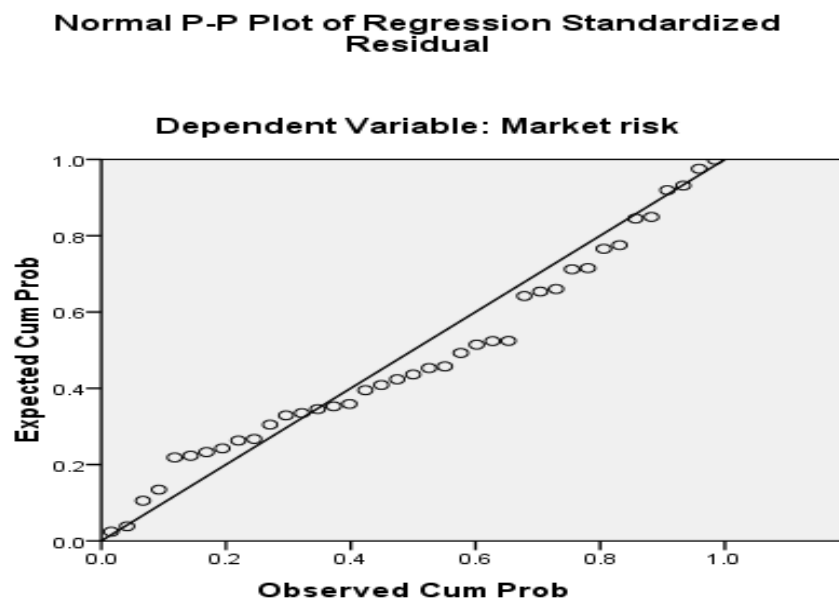


Figure 8. Normal P-P Plot graphic of the consumer goods industries on Market Risk (β) registered in Indonesia Stock Exchange in the year of 2010-2012

Based on the figure 7 and figure 8, it is shown that the results of normality test using histogram graphic analysis and normal plot graphic, is the normal distribution pattern which is close to normal. Therefore, we can see dots spreaded around the diagonal line in the graphic. In order to ensure whether residual data is distributed normally or not, we can perform a sample of Kolmogorov-Smirnov test.



Table 13. The result of Kolmogorov-Smirnov test of the consumer goods industries on Market Risk (β) registered in Indonesian Stock Exchange in the year of 2010-2012

One-Sample Kolmogorov-Smirnov Test			Market risk
N			39
Normal Parameters ^{a,b}	Mean		.4710
	Std. Deviation		.29596
Most Extreme Differences	Absolute		.121
	Positive		.121
	Negative		-.057
Kolmogorov-Smirnov Z			.758
Asymp. Sig. (2-tailed)			.613

a. Test distribution is Normal.

b. Calculated from data.

The result of Kolmogorov-Smirnov test in table 13 shows asymptotic significance value greater than 0.05 which is 0.613. This value reflects that the regression model used has meet the assumptions of normality.

(2) The Result Of Multicollinearity Test

Multicollinearity test is aimed to test whether the regression model finds a correlation among the independent variables. There should not be a correlation among the independent variables in a good regression model (Ghozali, 2012 p. 105). In this research, the researcher detects the presence or absence of multicollinearity in the regression model as seen on the value of tolerance and variance inflation factor (VIF). If the value of tolerance is less than 0.1 and VIF value is greater than 10, There will be multicollinearity. If the value of tolerance is greater than 0.1 and VIF value is less than 10, there is



no multicollinearity. The result of VIF and tolerance can be seen in the following table:

Table 14. Test Result of the Multicollonierity ROE on Variance Inflation Factor (VIF) in the Consumer Goods Industries Listed on the Indonesian Stock Exchange in the year of 2010 – 2012

Variable	Tolerance	VIF value	Decision
DFL	0.721	1.387	No multicollinearity
DR	0.619	1.617	No multicollinearity
Market Risk	0.478	2.090	No multicollinearity

Source: Processed Data (2014)

Table 15. Test Result of the Multicollonierity EPS on Variance Inflation Factor (VIF) in the Consumer Goods Industries Listed on the Indonesia Stock Exchange in the year of 2010 – 2012

Variable	Tolerance	VIF value	Decision
DFL	0.721	1.387	No multicollinearity
DR	0.619	1.617	No multicollinearity
Market Risk	0.478	2.090	No multicollinearity

Source: Processed Data (2014)

Table 16. Test Results of the Multicollonierity Market Risk (β) on Variance Inflation Factor (VIF) in the Consumer Goods Industries Listed on the Indonesia Stock Exchange in the year of 2010 – 2012

Variable	Tolerance	VIF value	Decision
DFL	0.947	1.055	No multicollinearity
DR	0.947	1.055	No multicollinearity

Source: Processed Data (2014)

Based on the tables 14, 15 and 16, it can be seen that the variable Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) and market risk (β) have a tolerance value greater than 0.1 and less than 10 VIF ($VIF < 10$) on ROE and EPS. The Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) have a tolerance value greater than 0.1 and less than 10 VIF (VIF



<10) on market risk (β). Based on the result in the table 14, 15 and Table 16, it can be concluded that there is no multicollinearity in the regression model.

(3) The Result Of Autocorrelation Test

Autocorrelation test is aimed to test whether there is correlation between the bully error on t period and the bully error on t-1 period in the linear regression model. If there is a correlation, then there is a problem called autocorrelation. This test can be detected using Durbin Watson (DW test). A good regression model is autocorrelation-free regression, in which the value of Durbin Watson calculation lies in the area with no autocorrelation ($dU < dw < 4 - dU$). Autocorrelation test results can be seen in table 16 below.

Table 17. Test Result of The Autocorrelation Return On Equity (ROE) on the Consumer Goods Industries Listed on the Indonesian Stock Exchange in the year of 2010 – 2012

N	α	k'	dU	dw	$4 - dU$	Decision
39	0,05	3	1.658	1.294	2.342	Autocorrelation

Source: Processed Data (2014)

Based on the test result in Table 17, testing against statistical regression models resulting dw statistic is equal to 1.294. In this research, the number of observations (n) as many as 39 samples and independent variables (k') as many as 3 variables will yield an upper limit (dU) of 1.658. Autocorrelation regression model result shows that the data does not lie in $dU < dw < 4 - dU$. From the data, we can concluded that the regression model used is autocorrelation. Autocorrelation in ROE arises because of sequential observations over time and related to one another.



Table 18. Test Result of The Autocorrelation Earning Per Share (EPS) on the Consumer Goods Industries Listed on the Indonesian Stock Exchange in the year of 2010 – 2012

N	α	k'	d_U	d_W	$4 - d_U$	Decision
39	0,05	3	1.658	1.780	2.342	No Autocorrelation

Source: Processed Data (2014)

Based on the test results in Table 18, testing against statistical regression models resulting d_W statistic is equal to 1.780. In this research, the number of observations (n) as many as 39 samples and independent variables (k') as many as 3 variables will yield an upper limit (d_U) of 1.658. Autocorrelation regression model result shows that the data lies in $d_U < d_W < 4 - d_U$. From the data, we can concluded that the regression model used is non autocorrelation.

Table 19. Test Results of The Autocorrelation Market Share (β) on the Consumer Goods Industries Listed on the Indonesian Stock Exchange in the year of 2010 – 2012

N	α	k'	d_U	d_W	$4 - d_U$	Decision
39	0,05	2	1.597	1.929	2.403	No Autocorrelation

Source: Processed Data (2014)

Based on the test result in Table 19, testing against statistical regression models resulting d_W statistic is equal to 1.929. In this research, the number of observations (n) as many as 39 samples and independent variables (k') as many as 2 variables will yield an upper limit (d_U) of 1.597. Autocorrelation regression model result shows that the data lies in $d_U < d_W < 4 - d_U$. From the data, we can concluded that the regression model used is non autocorrelation.

(4) The Result Of Heteroscedasticity Test

Heteroscedasticity test is aimed to test whether there is variance dissimilarity that occurs in the regression model from residual of one



observation to the other observation. If variance from the residual of one observation to another observation is fixed, then it is called homoscedasticity. If it is different, it is called heteroscedasticity. A good regression model is homoscedasticity (Ghozali, 2012:139). In this research, heteroscedasticity test is done with scatterplot graph analysis between predictive value of the dependent variable ZPRED and the residual SRESID. The graph of Scatterplot shows that the points are randomly spread over any number below 0 on the y-axis. It can be concluded that there is no heteroscedasticity on the regression model. It can be shown by the scatterplot graph in the following figure.

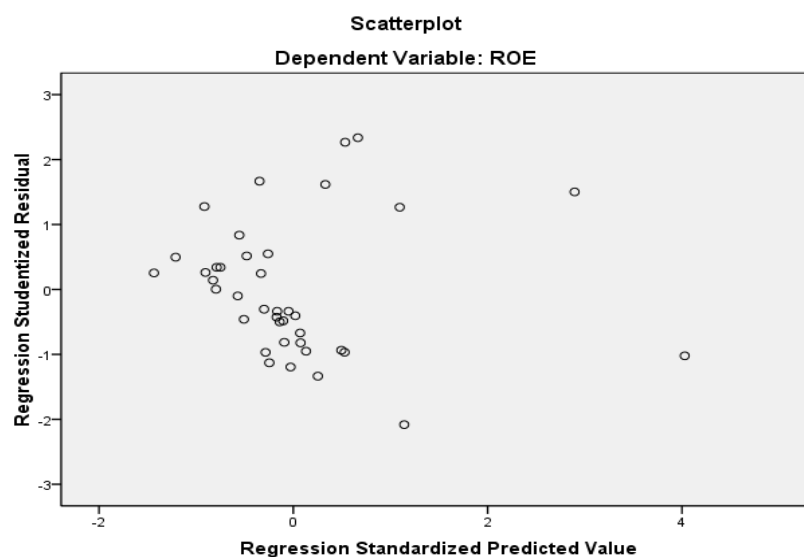


Figure 9 The Result of Heteroscedasticity on the consumer goods industries Listed on the Indonesian Stock Exchange in the year of 2010–2012

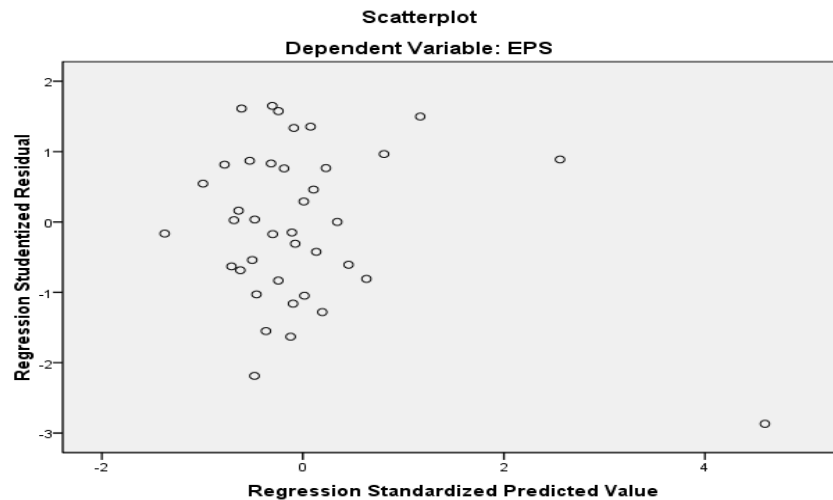


Figure 10. The Result of Heteroscedastisity on the consumer goods industries Listed on the Indonesian Stock Exchange in the year of 2010–2012

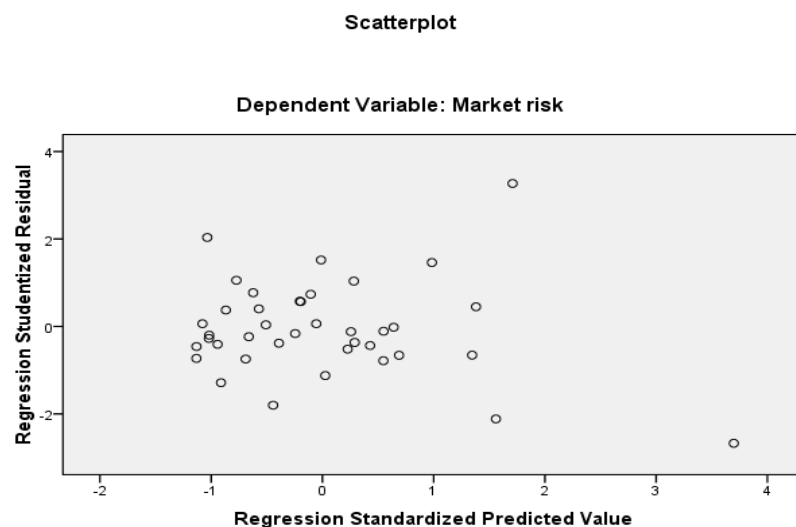


Figure 11. The Result of Heteroscedastisity on the consumer goods industries Listed on the Indonesian Stock Exchange in the year of 2010–2012



Based on the figure 9, 10 and 11, testing of scatterplot explains that the sample data are randomly distributed and do not form a particular pattern. Data is scattered both above and below the 0 on the y-axis. This figure shows there is no heteroscedasticity in the regression model used.

5.3.4 Path Statistical Analysis

5.3.4.1 The Effect of Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) On Market Risk (β) (Variable X_1 , X_2 On The Variable Z)

The result of testing the effect of Degree Of Financial Leverage (DFL) (X_1) and Debt to Total Assets (DR) (X_2) on market risk (β) (Z) can be seen in the following table:

Table 20. The result of testing the effect of Degree Of Financial Leverage (DFL) (X_1) and Total Debt to Total Assets (DR) (X_2) on market risk (β) (Z) (Variable X_1 , X_2 On The Variable Z)

Independent Variable	Standardized	t_{count}	Probability	Information
	Coefficients beta			
X_1 (DFL)	0.398	3.362	0.002	Significant
X_2 (DR)	0.518	4.375	0.000	Significant
Dependent Variable	Z (Market Risk (β))			
R	0.722			
R square (R_2)	0.522			
Adjusted R square	0.495			
F _{count}	19.623			
Probability F _{count}	0.000			

Source: Processed Data (2014)

Based on the table 20, it can be seen that the variable of the Degree of Financial Leverage (DFL) (X_1) and Debt to Total Assets (DR) (X_2), have a



significant effect on *market risk* (β) (Z). Based on the test results of the path coefficients in table 19, the probability of F count value obtained is equal to 0.000 ($p < 0.05$). There is a significant simultaneous influence between the *Degree of Financial Leverage* (DFL) (X_1), and *Debt to Total Assets* (DR) (X_2) on *market risk* (β) (Z). Therefore the result supports the hypothesis, H_0 is rejected and H_a is accepted.

The amount of contribution variable of the *Degree of Financial Leverage* (DFL) (X_1) and *Debt to Total Assets* (DR) (X_2) on *market risk* (β) (Z) can be seen from the value of Adjusted R Square which is 0.495. This means that 49.5 % variable *market risk* (β) (Z) will be influenced by the independent variables. The *Degree of Financial Leverage* (DFL) and *Debt to Total Assets* (DR). Then, a percentage of 50.5 % is influenced by other variables that are not addressed in this research.

The value of R (correlation coefficient) indicates that the magnitude of the relationship within the independent variables is the *Degree of Financial Leverage* (DFL) and the *Debt to Total Assets* (DR) on the dependent variables, namely the *market risk* (β). The value of R (correlation coefficient) is equal to 0.722. The value of this correlation suggests that the relationship among the independent variables is the *Degree of Financial Leverage* (DFL) (X_1) and the *Debt to Total Assets* (DR) (X_2) on *market risk* (β) (Z) falls into category of a low correlation because there is no interval from 0.75 to 1.00. This relationship is positive, meaning that if the independent variables increase, the dependent variable will also increase.

Based on the test result of each independent variables, which consist of *Degree of Financial Leverage* (DFL) (X_1) and *Debt to Total Assets*



(DR) (X2) on the dependent variables and intervening variable. The result is shown, as follows:

- (1) Based on the result of statistical calculation, *Degree of Financial Leverage (DFL)* (X1) has a direct relationship and is significantly positive effect on the *market risk* (β) (Z) in the error rate of 0.050. This relationship can be evidenced by the magnitude of the path coefficient which is 0.398 with a probability value of 0.002 ($0.002 < 0.050$). Thus, the *Degree of Financial Leverage (DFL)* (X1) has a significant influence on the variable the *market risk* (β) (Z).

- (2) Based on the result of statistical calculations, *Debt to Total Assets (DR)* (X2) has a direct relationship and is significantly positive effect on the *market risk* (β) (Z) in the error rate of 0.050. This relationship can be evidenced by the magnitude of the path coefficient which is equal to 0.518, with a probability value of 0.000 ($0.000 < 0.050$). Thus, the variable of *Debt to Total Assets (DR)* (X2) has significant influence on the variable the *market risk* (β) (Z).

5.3.4.2. Path Coefficient

The result of path analysis with the coefficient value or standardize for each variables can be seen in the following figure:

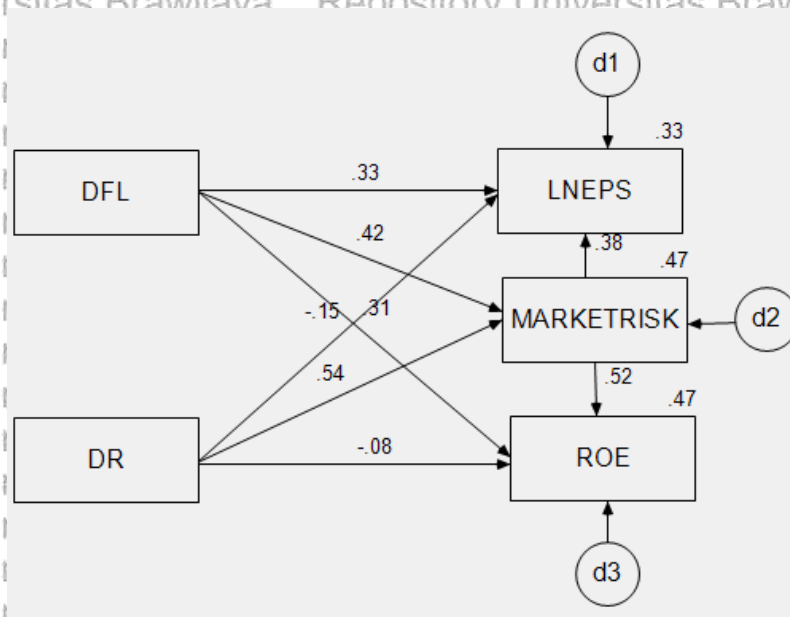


Figure 12. The Result of Path Coefficient

The result of testing path analysis with the coefficient value or standardize for each variables can be seen in the following table:

Table 21. Path Coefficient value

variable		Estimate
MARKETRISK <---	DFL	0.418
MARKETRISK <---	DR	0.545
LNEPS <---	DFL	0.334
ROE <---	DFL	0.310
LNEPS <---	DR	-0.146
ROE <---	DR	-0.076
ROE <---	MARKETRISK	0.523
LNEPS <---	MARKETRISK	0.383

Source: Processed Data (2014)



Based on table 21, the result of path analysis in this research are as follows:

- (1) If the variable of *Degree of Financial Leverage* changes, it will cause a change in the variable of the *market risk*. The positive sign indicates that there is a change in the same direction. If the variable of the *Degree of Financial Leverage (DFL)* increases, the *market risk* will also increase. If the variable of the *Degree of Financial Leverage (DFL)* decreases, the variable of the *market risk* will also decrease, with value of the path coefficient equal to 0.418.
- (2) If the variable of *Debt to Total Assets (DR)* changes, it will cause a change in the variable of the *market risk*. The positive sign indicates that there is a change in the same direction. If the variable of the *Debt to Total Assets (DR)* increases, the *market risk* will also increase. If the variable of the *Debt to Total Assets (DR)* decreases, the variable of the *market risk* will also decrease, with value of the path coefficient equal to 0.545.
- (3) If the variable of *Degree of Financial Leverage* changes, it will cause a change in the variable of *Earning Per Share (EPS)*. The positive sign indicates that there is a change in the same direction. If the variable of the *Degree of Financial Leverage (DFL)* increases, *Earning Per Share (EPS)* will also increase. If the variable of the *Degree of Financial Leverage (DFL)* decreases, the variable of *Earning Per Share (EPS)* will also decrease, with value of the path coefficient equal to 0.334.
- (4) If the variable of *Degree of Financial Leverage* changes, it will cause a change in the variable of *Return On Equity (ROE)*. The positive sign



indicates that there is a change in the same direction. If the variable of the *Degree of Financial Leverage (DFL)* increases, the variable of *Return On Equity (ROE)* will also increase. If the variable of the *Degree of Financial Leverage (DFL)* decreases, the variable of *Return On Equity (ROE)* will also decrease, with value of the path coefficient equal to 0.310.

(5) If the variable of *Debt to Total Assets (DR)* changes, it will cause a change in the variable of *Earning Per Share (EPS)*. The negative sign indicates that there is no a change in the opposite direction. If the variable of the *Debt to Total Assets (DR)* increases, *Earning Per Share (EPS)* will decrease. If the variable of the *Debt to Total Assets (DR)* decreases, the variable of *Earning Per Share (EPS)* will increase, with value of the path coefficient equal to -0.146.

(6) If the variable of *Debt to Total Assets (DR)* changes, it will cause a change in the variable of *Return On Equity (ROE)*. The negative sign indicates that there is no a change in the opposite direction. If the variable of the *Debt to Total Assets (DR)* increases, the variable of *Return On Equity (ROE)* will decrease. If the variable of the *Debt to Total Assets (DR)* decreases, the variable of *Return On Equity (ROE)* will increase, with value of the path coefficient equal to -0.076.

(7) If the variable of *market risk* changes, it will cause a change in the variable of *Return On Equity (ROE)*. The positive sign indicates that there is a change in the same direction. If the variable of the *market risk* increases, the variable of *Return On Equity (ROE)* will also increase. If the variable of *market risk* decreases, the variable of *Return On Equity (ROE)* will also decrease, with value of the path coefficient equal to 0.523.



(8) If the variable of *market risk* changes, it will cause a change in the variable of *Earning Per Share (EPS)*. The positive sign indicates that there is a change in the same direction. If the variable of the *market risk* increases, the variable of *Earning Per Share (EPS)* will also increase. If the variable of *market risk* decreases, the variable of *Earning Per Share (EPS)* will also decrease, with value of the path coefficient equal to 0.383.

5.3.4.3. Determination Coefficient

The coefficient of determination is a coefficient that shows the influence or contribution of endogenous and exogenous variables on variables of one endogenous to other endogenous variables. Here are the test results that demonstrate the value of the coefficient of determination:

Table 22. Coefficient value of determination

Variable	R ²
Degree of Financial Leverage (DFL), Debt to Total Assets (DR) and Market Risk (β) $\Rightarrow$ Return On Equity (ROE)	0.494
Degree of Financial Leverage (DFL), Debt to Total Assets (DR) and Market Risk (β) $\Rightarrow$ Earning Per Share (EPS)	0.334
Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) $\Rightarrow$ Market Risk (β)	0.522

Source: Processed Data (2014)

Based on table 22, the result of Coefficient value of determination in this research is as follows:

- (1) The magnitude of the changes of *Return On Equity (ROE)* caused by *Degree of Financial Leverage (DFL)*, *Debt to Total Assets (DR)* and



Market Risk (β) is equal to 0.494 or 49.4 %. In other words, the influence of Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) on Return On Equity (ROE) is equal to 50.6 %.

(2) The magnitude of the changes of Earning Per Share (EPS) caused by Degree of Financial Leverage (DFL), Debt to Total Assets (DR) and Market Risk (β) is equal to 0.334 or 34.4 %. In other words, the influence of Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) on Earning Per Share (EPS) is equal to 65.6 %.

(3) The magnitude of the changes of Market Risk (β) caused by Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) is equal to 0.522 or 52.2 %. In other words, the influence of Degree of Financial Leverage (DFL) and Debt to Total Assets (DR) on Market Risk (β) is equal to 47.8 %.

5.3.4.4. Direct Effect, Indirect Effect and Total Effect

Path analysis is used to see the consequences (effects) directly and indirectly from a variable that is hypothesized to be the cause of the variables treated as a result (effects). It can be explained that path analysis can be used to find an explanation for the patterns of direct and indirect relations of a causal model that is based on theoretical consideration and the knowledge of researcher.

The description of path analysis and path coefficients can explain the relationship between two variables, in which the relationship has a direct or indirect influence. The direct effect is the effect of independent variables affecting the dependent variable directly without going through other variables.

The indirect effect is the effect of independent variables on the dependent variable through another variable. To determine the strength of influence of



total effect among the variables in the model, which is used to compare how strong the influence from each variable. The following is the calculation of the magnitude of the direct effect, the indirect effects, and the total effect:

Table 23. Direct Effect

	DR	DFL	MARKETRISK
MARKETRISK	0.545	0.418	0.000
ROE	-0.076	0.310	0.523
LNEPS	-0.146	0.334	0.383

Source: Processed Data (2014)

Based on table 23, direct effect of *Debt to Total Assets (DR)* on *Return On Equity (ROE)* through *market risk (β)* is equal to -0.076. Direct effect of *Debt to Total Assets (DR)* on *Earnings Per Share (EPS)* through *market risk (β)* is equal -0.146. Direct effect of *Degree of Financial Leverage (DFL)* on *Return On Equity (ROE)* through *market risk (β)* is equal to 0.310. Direct effect of *Degree of Financial Leverage (DFL)* on *Earnings Per Share (EPS)* through *market risk (β)* is equal to 0.334.

Table 24. Indirect Effect

	DR	DFL	MARKETRISK
MARKETRISK	0.000	0.000	0.000
ROE	0.285	0.219	0.000
LNEPS	0.208	0.160	0.000

Source: Processed Data (2014)

Based on table 24, indirect effect of *Debt to Total Assets (DR)* on *Return On Equity (ROE)* through *market risk (β)* is equal 0.285. Indirect effect of *Debt to Total Assets (DR)* on *Earnings Per Share (EPS)* through *market risk (β)* is

equal to 0.208. Indirect effect of the *Degree of Financial Leverage (DFL)* on *Return On Equity (ROE)* through *market risk (β)* is equal to 0.219. Indirect effect of *Degree of Financial Leverage (DFL)* on *Earnings Per Share (EPS)* through *market risk (β)* is equal to 0.160.

Table 25. Total Effect

	DR	DFL	MARKETRISK
MARKETRISK	0.545	0.418	0.000
ROE	0.209	0.529	0.523
LNEPS	0.062	0.494	0.383

Source: Processed Data (2014)

Based on table 25, total effect of *Debt to Total Assets (DR)* on *Return On Equity (ROE)* through *market risk (β)* is equal to 0.209. Total effect of *Debt to Total Assets (DR)* on *Earnings Per Share (EPS)* through *market risk (β)* is equal to 0.062. Total effect of *Degree of Financial Leverage (DFL)* on *Return On Equity (ROE)* through *market risk (β)* is equal to 0.529. Total effect of *Degree of Financial Leverage (DFL)* on *Earnings Per Share (EPS)* through *market risk (β)* is equal to 0.494.

5.3.4.5. The Result of Hypothesis Testing

The Value of CR (Critical Ratio) is used to determine parameter whether there is or not a partial influence. To determine whether there is or not an influence of the endogenous on exogenous and variables of endogenous on endogenous, the following terms are used: comparing value with the probability level of significance = 0.05. If the significance value is less than 0.05, then there is an influence from variable of endogenous on exogenous and variables of one endogenous on other endogenous. If the significance value is greater than 0.05,

it means that there is no effect from the variable of endogenous on exogenous and variables of one endogenous on other endogenous.

Table 26. The Hypothesis Result Testing Of Direct Effect

Variable			Estimate	S.E.	C.R.	P	Hypothesis
MARKETRISK	←	DFL	.036	.010	3.454	.000	H5
MARKETRISK	←---	DR	.965	.215	4.495	.000	H6
LNEPS	←---	DFL	.196	.092	2.126	.033	H1
ROE	←---	DFL	.028	.012	2.224	.026	H2
LNEPS	←---	DR	-1.794	2.078	-0.863	.388	H3
ROE	←---	DR	-.141	.280	-.503	.615	H4
ROE	←---	MARKETRISK	.549	.171	3.216	.001	H8
LNEPS	←---	MARKETRISK	2.646	1.268	2.086	.037	H7

Source: Processed Data (2014)

Based on the table 26, the result of hypothesis testing in this research is as follows:

(1) Testing Hypothesis 1

Hypothesis 1 shows that there is significant effect from the variable of *Degree of Financial Leverage* (X1) on variable of *Earning Per Share (EPS)* (Y1). The result of the calculation from the variable of *Degree of Financial Leverage* (X1) effect on the variable of *Earning Per Share (EPS)* (Y1) shows that there is a significant result (with a probability value of $0.033 < 0.05$) and critical ratio is equal to $2.126 > 1.96$. It can be concluded that the research results support the hypothesis 1. The *Degree of Financial Leverage* variable (X1) has positive influence on *Earning Per Share (EPS)* (Y1) with coefficient of *Degree of Financial*



Leverage (*DFL*) which affects the *Earning Per Share (EPS)* as much as 0.196. In other words if *DFL* increases 1 unit, then the *Earning Per Share (EPS)* will also increase to 0.196. If *DFL* decreases 1 unit, then the *Earning Per Share (EPS)* will also decrease to 0.196.

(2) Testing Hypothesis 2

Hypothesis 2 shows that there is significant effect from the variable of *Degree of Financial Leverage (X1)* on variable of *Return On Equity (Y2)*. The result of the calculation from the variable of *Degree of Financial Leverage variable (X1)* effect on the variable of *Return On Equity (Y2)* shows that there is a significant result (with a probability value of $0.026 < 0.05$) and critical ratio is equal to $2.224 > 1.96$. It can be concluded that the research results support the hypothesis 2. The *Degree of Financial Leverage variable (X1)* has a significant effect and positive influence on *Return On Equity (Y2)* with coefficient of *Degree of Financial Leverage (DFL)* which affects the *Return On Equity (Y2)* as much as 0.028. In other words, if *DFL* increases 1 unit, then the *Return On Equity (Y2)* will also increase to 0.028. If *DFL* decreases 1 unit, then the *Return On Equity (Y2)* will also decrease to 0.028.

(3) Testing Hypothesis 3

Null hypothesis 3 shows that there is no significant effect from the variable of *Debt to Total Assets (DR) (X2)* on variable of *Earnings Per Share (EPS) (Y1)*. The result of the calculation from the variable of *Debt to Total Assets (DR) (X2)* effect on the variable of *Earnings Per Share (EPS) (Y1)* shows that there is no significant result (with a probability value of $0.388 > 0.05$) and critical ratio is equal to $-0.863 < 1.96$. This result



suggests that the researcher has to receive H_0 or null hypothesis that there is no effect from Debt to Total Assets (DR) (X2) on Earnings Per Share (EPS) (Y1) and the researcher has to reject alternative hypothesis or H_3 suggests that there is effect of Debt to Total Assets (DR) (X2) on Earnings Per Share (EPS) (Y1). It can be concluded that the research results does not support the hypothesis 3. Because, in the year of research, the value of Earnings Per Share (EPS) greater than Debt to Total Assets (DR). According to Brealey, et al (2001, p. 98-99) "A firm can achieve a higher growth rate without raising external capital if (1) it plows back a high proportion of its earnings, (2) it has a high return on equity (ROE), and (3) it has a low debt-to-asset ratio. The firm issues only enough debt to keep its debt-equity ratio constant. The sustainable growth rate is the highest growth rate the firm can maintain without increasing its financial leverage." The Debt to Total Assets (DR) has no significant effect and shows a negative influence on the variable of Earnings Per Share (EPS) with coefficient of Debt to Total Assets (DR) which affects the Earning Per Share (EPS) as much as -1.794. In other words if Debt to Total Assets (DR) increases 1 unit, then the Earnings Per Share (EPS) will be decreased is equal to -1.794. If Debt to Total Assets (DR) decreases 1 unit, then the Earnings Per Share (EPS) will increase to -1.794.

(4) Testing Hypothesis 4

Null hypothesis 4 shows that there is no significant effect from the variable of Debt to Total Assets (DR) (X2) on variable of Return On Equity (Y2). The result of the calculation from the variable of Debt to Total



Assets (DR) (X2) effect on the variable of *Return On Equity* (Y2) shows that there is significant result (with a probability value of $0.615 > 0.05$) and critical ratio is no equal to $-0.503 < 1.96$. This result suggests that the

researcher has to receive H0 or null hypothesis that there is no effect from Debt to Total Assets (DR) (X2) on *Return On Equity* (ROE) (Y2) and the researcher has to reject alternative hypothesis or H4 suggests that there is effect of Debt to Total Assets (DR) (X2) on *Return On Equity* (ROE) (Y2). It can be concluded that the research results does not support the hypothesis 4. Because, in the year of research, the value of *Return On Equity* (ROE) greater than Debt to Total Assets (DR).

According to Brealey, et al (2001, p. 98-99) "A firm can achieve a higher growth rate without raising external capital if (1) it plows back a high

proportion of its earnings, (2) it has a high return on equity (ROE), and (3) it has a low debt-to-asset ratio. The firm issues only enough debt to keep its debt-equity ratio constant. The sustainable growth rate is the highest growth rate the firm can maintain without increasing its financial leverage."

The Debt to Total Assets (DR) (X2) has no significant effect and negative influence on *Return On Equity* (Y2) with coefficient of Debt to Total Assets (DR) (X2) which affects the *Return On Equity* (Y2) as much as -0.141 . In

other words if Debt to Total Assets (DR) increases 1 unit, then the *Return On Equity* (ROE) will decrease to -0.141 . If Debt to Total Assets (DR)

increases 1 unit, then the *Return On Equity* (ROE) will decrease to -0.141 .

(5). Testing Hypothesis 5

Hypothesis 5 shows that there is significant effect from the variable of Degree of Financial Leverage (X1) on variable of market risk



(β) (Z). The result of the calculation from the variable of *Degree of Financial Leverage* (X_1) effect on the variable of *market risk* (β) (Z) shows that there is significant result (with a probability value of $0.000 < 0.05$) and critical ratio is equal of $3.454 > 1.96$. It can be concluded that the research result support the hypothesis 5. The *Degree of Financial Leverage* (X_1) has significant effect and positive influence on *market risk* (β) (Z) with coefficient of *Degree of Financial Leverage* (X_1) which affects the *market risk* (β) (Z) as much as 0.036. In other words if *Degree of Financial Leverage* (X_1) increases 1 unit, then the *market risk* (β) (Z) will also increase to 0.036 or 3.6 . If *Degree of Financial Leverage* (X_1) decreases 1 unit, then the *market risk* (β) (Z) will also decrease to 0.036.

(6) Testing Hypothesis 6

Hypothesis 6 shows that there is a significant effect from the variable of *Debt to Total Assets* (DR) (X_2) on variable of *market risk* (β) (Z). The result of the calculation from the variable of *Debt to Total Assets* (DR) (X_2) effect on the variable of *market risk* (β) (Z) shows that there is significant result (with a probability value of $0.000 < 0.05$) and critical ratio is equal to $4.495 > 1.96$. It can be concluded that the research results support the hypothesis 6. The *Debt to Total Assets* (DR) (X_2) has significant effect and positive influence on *market risk* (β) (Z) with coefficient of *Debt to Total Assets* (DR) (X_2) which affects the *market risk* (β) (Z) as much as 0.965. In other words, if *Debt to Total Assets* (DR) (X_2) increases 1 unit, then the *market risk* (β) (Z) will also increase to 0.965. If *Debt to Total Assets* (DR) (X_2) decreases 1 unit, then the *market risk* (β) (Z) will also decrease to 0.965.



(7) Testing Hypothesis 7

Hypothesis 7 shows that there is a significant effect from the variable of *market risk* (β) (Z) on variable of *Earning Per Share (EPS)* (Y_1).

The result of the calculation from the variable of *market risk* (β) (Z) effect on the variable of *Earning Per Share (EPS)* (Y_1) shows that there is significant result (with a probability value of $0.037 < 0.05$) and critical ratio is equal of $2.086 > 1.96$. It can be concluded that the research results support the hypothesis 7. The *market risk* (β) (Z) has significant effect and positive influence on *Earning Per Share (EPS)* (Y_1) with coefficient of *market risk* (β) (Z) which affects the *Earning Per Share (EPS)* (Y_1) as much as 2.646. In other words if *market risk* (β) (Z) increases 1 unit, then the *Earning Per Share (EPS)* (Y_1) will also increase to 2.646. If *market risk* (β) (Z) decreases 1 unit, then the *Earnings Per Share (EPS)* (Y_1) will also decrease to 2.646.

(8) Testing Hypothesis 8

Hypothesis 8 shows that there is a significant effect from the variable of *market risk* (β) (Z) on variable of *Return On Equity* (Y_2). The result of the calculation from the variable of *market risk* (β) (Z) effect on the variable of *Return On Equity* (Y_2) shows that there is significant result (with a probability value of $0.001 < 0.05$) and critical ratio is equal to $3.216 > 1.96$. It can be concluded that the research results support the hypothesis 8. The *market risk* (β) (Z) has significant effect and positive influence on *Return On Equity* (Y_2) with coefficient of *market risk* (β) (Z) which affects the *Return On Equity* (Y_2) as much as 0.549. In other words if *market risk* (β) (Z) increases 1 unit, then the *Return On Equity*

(Y2) will also increase to 0.549 or 54.9 %. If *market risk* (β) (Z) decreases 1 unit, then the *Return On Equity* (Y2) will also decrease to 0.549.

5.3.5 Discussion of Hypothesis Testing Results

The result of path analysis for each variables can be seen in the following figure:

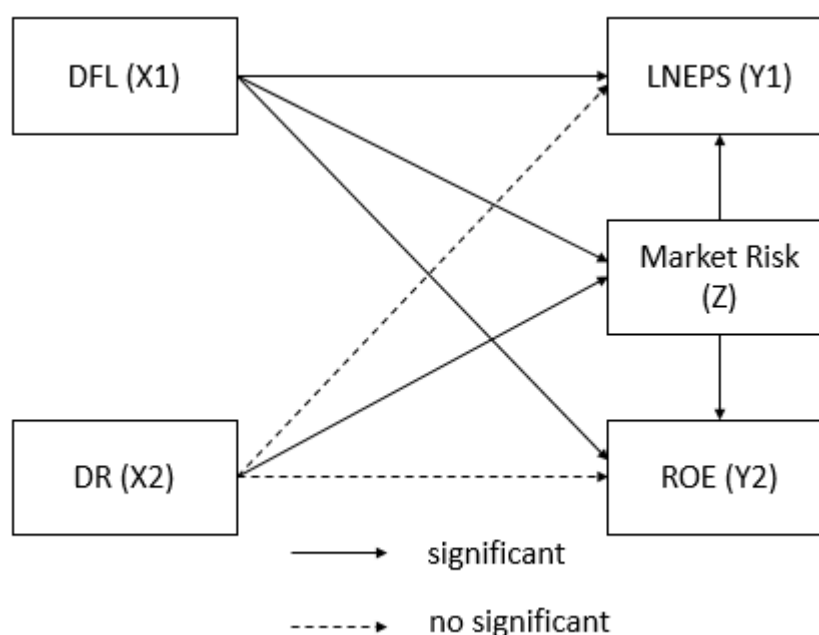


Figure 13. The Summary of Path Analysis

5.3.5.1 Hypothesis 1 [The variable of *Degree of Financial leverage* (DFL) (X1) affects *Earning Per Share* (EPS) (Y2)]

Based on the result obtained from the research, the variable of *Degree of Financial leverage* (DFL) (X1) has a significant effect on the variable of *Earning Per Share* (EPS) (Y1) because it has probability less than 0.05 which is 0.033, and also because it has a Critical Ratio more than 1.96 which is 2.126. The positive beta coefficient indicates a movement in the same direction between the variables of *Degree of Financial Leverage* (DFL) (X1) and *Earning*



per Share (EPS) (Y1). The variable of *Degree of Financial Leverage (DFL)* (X1) has a positive effect on the variable of *Earning per Share (EPS)* (Y1).

This result is in accordance with previous research by Gill and Mathur (2011). There is an influence from *financial leverage* of Canadian firms on profitability. One of the profitability ratio is *Earnings per Share (EPS)*. Using of very large debt will harm the company because the company will fall into the category of extreme leverage (debt extreme), a company stuck in high debt levels and difficult to let go of the burden of the debt. This is because of the fixed expenses that must be paid by the company regardless of income level. When profits decrease, *financial leverage* will have a negative impact (adverse). Declining profits cannot be used to cover the interest expense to be borne by the company. The companies that use large debt will bear the burden of high interest as well. Therefore, the use of debt is expected to generate a return greater than the interest paid.

5.3.5.2 Hypothesis 2 [The variable of *Degree of Financial leverage (DFL)* (X1) affects *Return On Equity (ROE)* (Y2)]

Based on the result obtained from the research, the variable of *Degree of Financial leverage (DFL)* (X1) has a significant effect on the variable of *Return On Equity (ROE)* (Y2) because it has probability less than 0.05, which is 0.026 and also because it has a Critical Ratio higher than 1.96, which 2.224. The positive beta coefficient indicates a movement in the same direction between the variables *Degree of Financial Leverage (DFL)* (X1) and *Return on Equity (ROE)* (Y2). The variable of *Degree of Financial Leverage (DFL)* (X1) has a positive effect on the variable of *Return on Equity (ROE)* (Y2).



This result is in accordance with previous research by Gill and Mathur (2011), which shows an influence from *financial leverage* of Canadian firms on profitability. One of the profitability ratio is *Return on Equity (ROE)*. *Degree of Financial Leverage (DFL)* has a positive effect on *ROE*. This is in same direction due to the interest expense which is less than the *ROE* of company. The interest expense ratio is used as the average annual interest rate in Indonesia. In the year of 2010, the average interest rate in Indonesia reached 6.5 %. In the year of 2011, it reached 6.58%. In the year of 2012, it reached 5.77 %. The average rate of Indonesia's interest rate is lower than the *ROE* of the resulting company. For example, *PT Indofood Sukses Makmur Tbk* in 2010 earned *ROE* of 94 %. This value is greater than the interest rate amounted to 6.5 %. In the year of 2011 *PT Indofood Sukses Makmur Tbk* obtained *ROE* as much as 96 %. This value is very high compared to interest expense to be borne. In the year of 2012 it increased again to 23 %. This value remains greater than the interest expense to be borne by the company. This indicates that the firm's value of *PT Indofood Sukses Makmur Tbk* is in a good condition. However, not all companies in the sample have a *Return on Equity (ROE)* of interest expense. For example, *PT Indofarma (Persero)* has *ROE* of 0.04 or 4 %, which was produced by the company in 2010. *ROE* at *PT Indofarma (Persero) Tbk* is the smallest *ROE* compared to other companies. This situation persisted in 2011. The value of *ROE* to 0.06 or 6 %, reached was 2012 *PT Indofarma (Persero) Tbk* had a *ROE* of 0.07 or 7 %. This value is greater than the interest expense to be borne by the company which is 5.77 %. This indicates that the firms in 2010 and 2011 had a high amount of debt. Those firms could not get maximum profit with interest above the *ROE*. In other words,



the value of the company was not in good condition. Meanwhile, in 2012 the company had a ROE greater than interest expense to be borne by the company. In other words, *PT Indofarma (Persero) Tbk* is in a good condition. It can be concluded that the *Degree of Financial Leverage (DFL)* has a positive impact on *Return on Equity (ROE)*. Although there are companies whose interest expense is greater than the ROE. The companies will still receive a profit even though it is not optimal.

5.3.5.3 Hypothesis 3 [The variable of *Debt to Total Assets (DR)* (X2) affects *Earning per Share (EPS)* (Y1)]

Based on the result obtained from the research, there is no significant effect from the variable of *Debt to Total Assets (DR)* (X2) on the variable of *Earning per Share (EPS)* (Y1) because it has probability of greater than 0.05, which is 0.388, and also because it has a Critical Ratio of less than 1.96, which is -0,863. The negative beta coefficient indicates a movement in the opposite direction between the variable of *Debt to Total Assets (DR)* (X2) and *Earnings per Share (EPS)* (Y1). The variable of *Debt to Total Assets (DR)* (X2) has a negative effect on the variable of *Earning per Share (EPS)* (Y1). Because, in the year of research, the value of Earnings Per Share (EPS) greater than Debt to Total Assets (DR). According to Brealey, et al (2001, p. 98-99) "A firm can achieve a higher growth rate without raising external capital if (1) it plows back a high proportion of its earnings, (2) it has a high return on equity (ROE), and (3) it has a low debt-to-asset ratio. The firm issues only enough debt to keep its debt-equity ratio constant. The sustainable growth rate is the highest growth rate the firm can maintain without increasing its financial leverage". This result is not in accordance with the previous research by Ojo (2012). There is



influence leverage *Debt to Total Assets* from companies in Nigeria on corporate performance. One of corporate performance is *Earnings per Share (EPS)*. The higher the value of *DR*, the higher use of *financial leverage* by the company is expected to provide higher returns on income available to shareholders in this *Earning Per share (EPS)*.

5.3.5.4 Hypothesis 4 [The variable of *Debt to Total Assets (DR) (X2)* affects *Return on Equity (ROE) (Y2)*]

Based on the result obtained from the research, the variable of *Debt to Total Assets (DR) (X2)* has no significant effect on the variable of *Return on Equity (ROE) (Y2)* because it has probability of more than 0.05 which is 0.615 and also because it has a Critical Ratio of less than 1.96 which is -0.503. The negative beta coefficient indicates a movement in the opposite direction between the variables *Debt to Total Assets (DR) (X2)* and *Return on Equity (ROE) (Y2)*. The variable of *Debt to Total Assets (DR) (X2)* has a negative effect on the variable of *Return on Equity (ROE) (Y2)*. Because, in the year of research, the value of *Return on Equity (ROE)* greater than *Debt to Total Assets (DR)*. According to Brealey, et al (2001, p. 98-99) "A firm can achieve a higher growth rate without raising external capital if (1) it plows back a high proportion of its earnings, (2) it has a high return on equity (ROE), and (3) it has a low debt-to-asset ratio. The firm issues only enough debt to keep its debt-equity ratio constant. The sustainable growth rate is the highest growth rate the firm can maintain without increasing its financial leverage. It turns out that the sustainable growth rate depends only on the plowback ratio and return on equity". This result is not in accordance with previous research by Akhtar, et al



(2012). There is an influence of *Debt to Total Assets* from Fuel & Energy Sector of Pakistan on *financial performance*. One of the financial performance is *Return on Equity (ROE)*.

5.3.5.5 Hypothesis 5 [The variable of *Degree of Financial Leverage (DFL)* (X1) affects *market risk* (β) (Z)]

Based on the result obtained from the research, there is significant effect from the variable of *Degree of Financial leverage (DFL)* (X1) on the variable of *market risk* (β) (Z) because it has probability of less than 0.05 which is 0.000 and also because it has a Critical Ratio of more than 1.96 which is 3.454. The positive beta coefficient indicates a movement in the same direction between the variables *Degree of Financial Leverage (DFL)* (X1) and *market risk* (β) (Z). The variable of *Degree of Financial Leverage (DFL)* (X1) has a positive effect on the variable of *market risk* (β) (Z). This result is in accordance with previous research by Gahlon and Genry (1982). In which *Degree of Financial Leverage (DFL)* has effect on *Systematic risk* or *market risk* (β) (Z).

5.3.5.6 Hypothesis 6 [The variable of *Debt to Total Assets (DR)* (X2) affects *market risk* (β) (Z)]

Based on the result obtained from the research, there is significant effect from The variable of *Debt to Total Assets (DR)* (X2) on the variable of *market risk* (β) (Z) because it has probability of less than 0.05 which is 0.000, and also because it has a Critical Ratio of more than 1.96 which is 4.495. The positive beta coefficient indicates a movement in the same direction between the variable of *Debt to Total Assets (DR)* (X2) and *market risk* (β) (Z). The variable of *Debt to Total Assets (DR)* (X2) has positive effect on the variable of *market risk* (β) (Z). This result is in accordance with previous research by Ojo



(2012). There is influence of *Debt to Total Assets* from companies in Nigeria on *Systematic risk or market risk* (β) (*Z*).

5.3.5.7 Hypothesis 7 [The variable of *Market risk* (β) (*Z*) affects *Earning per Share (EPS)* (*Y2*)]

Based on the result obtained from the research, there is significant effect from the variable of *market risk* (β) (*Z*) on the variable of *Earning per Share (EPS)* (*Y1*). It has probability of less than 0.05 which is 0.037, and also because it has a Critical Ratio of more than 1.96 which is 2.086. The positive beta coefficient indicates a movement in the same direction between the variables *market risk* (β) (*Z*) and *Earning per Share (EPS)* (*Y1*). The variable of *market risk* (β) (*Z*) has positive effect on the variable of *Earning per Share (EPS)* (*Y1*).

5.3.5.8 Hypothesis 8 [The variable of *Market risk* (β) (*Z*) affects *Return on Equity (ROE)* (*Y2*)]

Based on the result obtained from the research, there is not significant effect from the variable of *market risk* (β) (*Z*) on the variable of *Return on Equity (ROE)* (*Y2*). It has probability of less than 0.05 which is 0.001, and also because it has a Critical Ratio of more than 1.96 which is 3.216. The positive beta coefficient indicates a movement in the same direction between the variables *market risk* (β) (*Z*) and *Return on Equity (ROE)* (*Y2*). The variable of *market risk* (β) (*Z*) has positive effect on *Return on Equity (ROE)* (*Y2*).

5.4 Limitations of Research

Several limitations of this research are found:

1. This research uses only independent variables are Degree of Financial Leverage (DFL), Debt to Total Assets (DR) and market risk (β) as intervening



variable and uses only dependent variables are Earnings per Share (EPS) and Return on Equity (ROE). Actually, there are many more factors or variables that could affect Earnings per Share (EPS) and Return on Equity (ROE), such as Debt to Asset Ratio (DAR), Debt to Equity Ratio (DER), Equity Multiplier (EM), and the other indicators of leverage. Moreover, the samples size of this research is small. This research is limited to consumer goods industries in Indonesian Stock Exchange.

2. The researcher finds only annual time series data for 3 years from Indonesian Stock Exchange in the year of 2010-2012 with 5 criteria that is used in the sample. So, there are still limitations in the result of research. The researcher still found insignificant result in this research, that is the variable of Debt Ratio (DR) has a negative and a non-significant effect on the variable of Earning Per Share (EPS) and Return On Equity (ROE). Meanwhile, the previous research found that the variable of Debt to Total Assets (DR) has a significant effects on Earnings per Share (EPS) and Return on Equity (ROE).



CHAPTER VI

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This research is conducted to determine variables that have an influence on *Earning per Share (EPS)* and *Return on Equity (ROE)*. In this study the independent variables are the variable of *Degree of Financial Leverage (DFL)* and *Debt to Total Assets (DR)* and *market risk (β)* as intervening variable. Based on the conducted calculation of path analysis are:

1. The variable of *Degree of Financial Leverage (DFL)* (X_1) has a positive significant effect on the variable of *Earning per Share (EPS)* (Y_1). In other words, if the *Degree of Financial Leverage (DFL)* increases one percent, regardless of the other independent variables, *Earning per Share (EPS)* will also increase one percent. Thus, we can conclude that the use of high leverage can either get high profit or harm the company because the company would likely to fall into the category of *extreme leverage* (debt extreme).
2. The variable of *Degree of Financial Leverage (DFL)* (X_1) has a positive significant effect on the variable of *Return on Equity (ROE)* (Y_2). In other words, if the *Degree of Financial Leverage (DFL)* increases one percent, *ceteris paribus*, *Return on Equity (ROE)* (Y_2) will increase one percent. Therefore, using of high leverage will get high *Return on Equity (ROE)*. Although there are companies whose interest expenses is greater than the *ROE*, the company will still receive a profit even though it is not that optimal.



3. The variable of *Debt to Total Assets (DR)* (X_2) has a negative and a non significant effect on the variable of *Earning per Share (EPS)* (Y_1). In other words, if the *Debt to Total Assets (DR)* (X_2) increases one percent, regardless of the other independent variables, *Earning per Share (EPS)* will decrease one percent. The higher the value of *Debt to Total Assets (DR)*, the higher the use of *financial leverage* by the company is expected to provide higher returns on income available to shareholders in this *EPS*.
4. The variable of *Debt to Total Assets (DR)* (X_2) has a negative and a non significant effect on the variable of *Return on Equity (ROE)* (Y_2). In other words, if the *Debt to Total Assets (DR)* increases one percent, regardless of the other independent variables, *Return on Equity (ROE)* (Y_2) will decrease one percent.
5. The variable of *Degree of Financial Leverage (DFL)* (X_1) has a positive significant effect on the variable of *market risk (β) (Z)*. In other words, if the *Degree of Financial Leverage (DFL)* increases one percent, regardless of the other independent variables, *market risk (β) (Z)* will increase one percent. Using a high *financial leverage* will also result a high *market risk*. However, using *financial leverage* can help the company to get positive value of *market risk*.
6. The variable of *Debt to Total Assets (DR)* (X_2) has a positive significant effect on the variable of *market risk (β) (Z)*. In other words, if the *Debt to Total Assets (DR)* (X_2) increases one percent, regardless of the other independent variables, *market risk (β) (Z)* will increase one percent. Using high *Debt to Total Assets* will also get high *market risk*. However, using



Debt to Total Assets can help the company to get positive value of *market risk* (β).

7. The variable of *market risk* (β) (Z) has a positive significant effect on the variable of *Earning per Share (EPS)* ($Y1$). In other words, if the *market risk* (β) (Z) increases one percent, regardless of the other independent variables, *Earning per Share (EPS)* will increase one percent. The companies must have positive betas in order to have aggressive stocks, betas or *market risk* greater than 1.0. It means that their returns tend to respond more than 1.0 for one change in the return of the overall market.

8. The variable of *market risk* (β) (Z) has a positive significant effect on the variable of *Return on Equity (ROE)* ($Y2$). In other words, if the *market risk* (β) (Z) increases one percent, regardless of the other independent variables, *Return on Equity (ROE)* ($Y2$) will increase one percent. The companies must have positive betas in order to have aggressive stocks, betas or *market risk* greater than 1.0. It means that their returns tend to respond more than 1.0 for one change in the return of the overall market.

6.2 Recommendation

The recommendation of research result that have been achieved, are as follows:

1. For the management of the company, the results show that the DFL has a significant effect on EPS, ROE and market risk, DR has a significant effect on market risk, but there is no significant effect on ROE and EPS. The value of the highest critical ratio is the DR on the market risk which is 4.495. Then the



company should be able to add value to the DR so that it will get the maximum benefit.

2. Increased DR will provide a positive contribution to Return on Equity and indirectly increases the Earning per Share, and increasing DR will increase market risk.

3. The result of this study can be used as a reference for other studies that uses the independent variables, namely DR and DFL, an intervening variable, namely market risk and the dependent variables, namely EPS and ROE. The amount of contribution variable of the Degree of Financial Leverage (DFL) (X1) and Debt to Total Assets (DR) (X2) on market risk (β) (Z) which is 0.495.

This means that 49.5 % variable market risk (β) (Z) will be influenced by the independent variables. Then, a percentage of 50.5 % is influenced by other variables that are not addressed in this research. To improve this condition, future studies should be able to make additions to the dependent variables, the intervening variables and the independent variables used.



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Table of BI Rate

Date	BI Rate	Pers
11 Des 2012	5.75%	Pranala siaran pers
8 Nov 2012	5.75%	Pranala siaran pers
11 Okt 2012	5.75%	Pranala siaran pers
13 Sept 2012	5.75%	Pranala siaran pers
9 Agust 2012	5.75%	Pranala siaran pers
12 Juli 2012	5.75%	Pranala siaran pers
12 Juni 2012	5.75%	Pranala siaran pers
10 Mei 2012	5.75%	Pranala siaran pers
12 April 2012	5.75%	Pranala siaran pers
8 Maret 2012	5.75%	Pranala siaran pers
9 Feb 2012	5.75%	Pranala siaran pers
12 Jan 2012	6.00%	Pranala siaran pers
8 Des 2011	6.00%	Pranala siaran pers
10 Nov 2011	6.00%	Pranala siaran pers
11 Okt 2011	6.50%	Pranala siaran pers
8 Sept 2011	6.75%	Pranala siaran pers
9 Agust 2011	6.75%	Pranala siaran pers
12 Juli 2011	6.75%	Pranala siaran pers
9 Juni 2011	6.75%	Pranala siaran pers
12 Mei 2011	6.75%	Pranala siaran pers
12 April 2011	6.75%	Pranala siaran pers
4 Maret 2011	6.75%	Pranala siaran pers
4 Feb 2011	6.75%	Pranala siaran pers
5 Jan 2011	6.50%	Pranala siaran pers
3 Des 2010	6.50%	Pranala siaran pers
4 Nov 2010	6.50%	Pranala siaran pers
5 Okt 2010	6.50%	Pranala siaran pers
3 Sept 2010	6.50%	Pranala siaran pers
4 Agust 2010	6.50%	Pranala siaran pers
5 Juli 2010	6.50%	Pranala siaran pers
3 Juni 2010	6.50%	Pranala siaran pers
5 Mei 2010	6.50%	Pranala siaran pers
6 April 2010	6.50%	Pranala siaran pers
4 Maret 2010	6.50%	Pranala siaran pers
4 Feb 2010	6.50%	Pranala siaran pers
6 Jan 2010	6.50%	Pranala siaran pers



THE EFFECT OF FINANCIAL LEVERAGE ON FIRM VALUE AND MARKET RISK

(Research on Consumer Goods Industries Listed In Indonesian Stock Exchange In
The Year of 2010-2012)

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ABSTRACT

This study examines the effect of financial leverage on firm value and market risk, the place of research in consumer goods industries listed in Indonesian stock exchange in the year of 2010-2012. The researcher uses path analysis. Data were collected from 13 companies by annual report. The research suggests that the variable of Degree of Financial Leverage (DFL) has a positive significant effect on the variable of Earning Per Share (EPS). The variable of Degree of Financial Leverage (DFL) has a positive significant effect on the variable of Return On Equity (ROE). The variable of Debt Ratio (DR) has a negative and a non-significant effect on the variable of Earning Per Share (EPS). The variable of Debt Ratio (DR) has a negative and a non-significant effect on the variable of Return On Equity (ROE). The variable of Degree of Financial Leverage (DFL) has a positive significant effect on the variable of market risk (β). The variable of Debt Ratio (DR) has a positive significant effect on the variable of market risk (β). The variable of market risk (β) has a positive significant effect on the variable of Earning Per Share (EPS). The variable of market risk (β) has a positive significant effect on the variable of Return On Equity (ROE).

Keywords: Financial Leverage, Firm Value, Market Risk

1. Introduction

A company produces goods for obtaining a target of profit. Profit is obtained by a company from the total revenue minus production costs incurred by a company. While a company tries to get a maximum profit, the company should keep producing with a minimum cost. If a company wants to produce goods, the company must have a sufficient fund to operate smoothly. One of the sources of the fund commonly used by a company comes from the external sources of funding. It means that the fund is not available from the operation of the company. It derives from other parties outside the company.

The operation of a company does not always run smoothly. If the company is

experiencing constraints in operation and requires more funding, it must cover the required costs. If the fund needed is internally insufficient, then the fund is covered by leverage. When the company gets loan with fixed charges from the outside of the company, it will arise debt as a consequence of the loan. This suggests that the company has financial leverage.

Financial leverage can say that a firm with debt on its balance sheet is a levered firm, and a firm that finances its operations entirely with equity is an unlevered firm. That effect can be either positive or negative, depending on the returns a firm earns on the money it borrows (Megginson, et al, 2007). A manager has to know the



condition of a company before using the financial leverage. A Leverage is obtained not only on the fund for production but it is also taken to increase the profits for shareholders. A manager has to figure out the firm value, which can be determined by measuring its EPS and ROE. The most common measurements of the company performance are earnings per share (EPS) and the result of return on equity (ROE) (Weston and Copeland, 2010 p. 195).

An analyst of PT Batavia Prosperindo Securities Julio Parningotan (2012) in Azhar (2012), suggested investors to avoid the shares of Bakrie group for a while, following the falling stock of Bakrie Group last few days. He recommended that the investors turn to investing stocks of the consumer and the infrastructure sector, which were tended rising lately. Unlike BUMI which is affected by international commodity, consumer and infrastructure sectors tend to be defensive on the global economy (<http://www.tempo.com>).

Based on the previous analysis, the researcher wants to know the effect of financial leverage variables on firm value and market risk. Financial leverage variables in this study consisted of DR and DFL. Variables of firm value in this research consisted of EPS and ROE. Intervening variable in this research is market risk.

The researcher took the object of research in the consumer goods industries companies on the Indonesian Stock Exchange. The researcher choose the consumer goods industries because the companies produces products that are often consumed by consumers. This causes the market share of product of consumer goods industries not only to a specific community like other industrial products, but also to the middle-market segment up or down the middle. So, the industries have good prospect and can maintain the firm's value in order stay well. Consumer goods industries have a strong sector for consumer products primarily needed of people. The level of demand is quite stable against a wide

range of consumer products with global situation showing defensive nature of the consumer's sector, especially for consumer goods in the territory of Indonesia where the target market of consumer goods is human.

2. Content

A. Leverage

According Anderson (1987, p. 38) Leverage: the use of fixed charge obligations with the intent of magnifying the potential return to the firm. Financial leverage: a measure of the amount of debt used in the capital structure of the firm. Financial leverage is beneficial only if the firm can employ the borrowed funds to ear a higher rate of return than the interest rate on the borrowed amount. Leverage ratio can be calculated by using the formula:

$$\text{Leverage Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

(Brealey, et al, 2001, p. 138)

Financial leverage defines that a firm with debt on its balance sheet is a levered firm. Debt effect can be either positive or negative, depending on the returns a firm earns on the money it borrows (Megginson, et al, 2007, p. 451). The degree of financial leverage (DFL) can be computed more easily as follows:

$$\text{DFL} = \frac{\text{Earnings Before Interest and Tax}}{\text{Earning Before Tax}}$$

(Gibson, 2009, p. 336)

B. Return On Equity (ROE)

Return On Equity (ROE) is a measure of how the stockholders fared during the year. Because benefiting shareholders is our goal, ROE is, in an accounting sense, the true bottom-line measure of performance. ROE is usually measured as:

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Total Equity}}$$

(Ross, et al, 2008, p. 53)



C. Earning Per Share (EPS)

Computing earnings per share initially involves net income, preferred stock dividend declared and accumulated, and the weighted average number of shares outstanding, as follows:

$$\text{EPS} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Number of Common Shares Outstanding}}$$

(Gibson, 2009, p. 338)

D. Market Risk

We know the performance of the market reflects only macro events, because firm-specific events—that is, unique risks—average out when we look at the combined performance of thousands of companies and securities. In principle the market portfolio should contain all assets in the world economy—not just stocks, but bonds, foreign securities, real estate, and so on. In practice, however financial analysts make do with indexes of the stock market, usually the Standard and Poor's Composite Index (the S&P 500). Our task here is to define and measure the risk of *individual* common stocks. You can probably see where we are headed. Risk depends on exposure to macroeconomic events and can be measured as the sensitivity of a stock's returns to fluctuations in returns on the market portfolio. This sensitivity is called the stock's beta. Beta is often written as the Greek letter β (Brealey et al, 2001, p. 408).

The contribution of a stock to the risk of a well-diversified portfolio, we should not look at risk if the shares are owned separately, but we have to measure the market risk and bring us to measure sensitivity to change market. Profit rate sensitivity to changes of market is called beta investment (Husnan, 1990). Beta is usually measured as:

$$\beta = \frac{\text{Cov}(R_i - R_M)}{\sigma^2(R_M)}$$

(Husnan, 1990 p. 139-140)

3. Research Method

The researcher uses explanatory research with quantitative approach for researching type. Quantitative approach—post positivist worldview, experimental strategy of inquiry, and pre- and post-test measures of attitudes. In this scenario, the researcher tests a theory by specifying narrow hypotheses and the collection of data to support or refute the hypotheses. An experimental design is used in which attitudes are assessed both before and after an experimental treatment. The data are collected on an instrument that measures attitudes, and the information is analyzed using statistical procedures and hypothesis testing (Creswell, 2009:16). Explanatory research is a research that aims to test a theory or hypothesis to strengthen or even reject the theory or hypothesis of existing research results.

The independent variable consists of Degree of Financial Leverage (DFL) (X_1) and Debt to Total Assets (DR) (X_2) on firm's value with the dependent variables consist of Earnings Per Share (EPS) (Y_1) and Return On Equity (ROE) (Y_2) and the intervening variable is market risk (Z) on the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010-2012. The research was conducted in Indonesian Stock Exchange in University of Brawijaya. The researcher chooses this location because the companies, whose financial statements have been audited by a public accountant and published is incorporated in the IDX that have gone public.

The purpose of sampling in this research was to determine the financial statements of the companies on the consumer goods industries listed in Indonesian Stock Exchange in the year of 2010-2012.

Below are the companies that used in the sample:

1. PT Indofood Sukses Makmur Tbk
2. PT Mayora Indah Tbk
3. PT Gudang Garam Tbk
4. PT Hanjaya Mandala Sampoerna Tbk
5. PT Kalbe Farma Tbk



6. PT Tempo Scan Pacific Tbk
7. PT Unilever Indonesia Tbk
8. PT Akasha Wira International Tbk
9. PT Ultrajaya Milk Industry and Trading Company Tbk
10. PT Kimia Farma (Persero) Tbk
11. PT Darya Varia Laboratoria Tbk
12. PT Indofarma (Persero) Tbk
13. PT Taisho Pharmaceutical Indonesia Tbk

4. Hypotheses Testing and Discussion

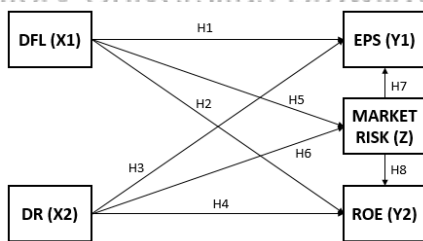


Figure 1 shows conceptual model of this research. There are 8 hypotheses:

- H1:** The Degree of Financial leverage (DFL) affects Earning Per Share (EPS)
- H2:** The Degree of Financial leverage (DFL) affects Return On Equity (ROE)
- H3:** The Debt Ratio (DR) affects Earning Per Share (EPS)
- H4:** The Debt Ratio (DR) affects Return On Equity (ROE)
- H5:** The Degree of Financial Leverage (DFL) affects market risk
- H6:** The Debt Ratio (DR) affects market risk
- H7:** The Market risk affects Earning Per Share (EPS)
- H8:** The Market risk affects Return On Equity (ROE)

5. Conclusion of This Research

Table 1. Concept and Indicator

Concept	Variable	Indicator
Financial Leverage	Degree of Financial Leverage (DFL) (X1)	$\frac{\text{Earnings Before Interest and Tax}}{\text{Earning Before Tax}}$
	Debt to Total Assets (DR) (X2)	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$

Concept	Variable	Indicator
Firm Value	Earning Per Share (EPS) (Y1)	$\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Number of Common Shares Outstanding}}$
	Return On Equity (ROE) (Y2)	$\frac{\text{Net Income}}{\text{Total Equity}}$
Risk	Market Risk (Z)	$\beta = \frac{\text{Cov}(R_i - R_M)}{\sigma^2(R_M)}$

Source: Processed Data (2014)

Based on the hypothesis that has been formulated, the analysis of the data used in this study is the Path Analysis. According Ghazali (2012:249) Path analysis is an extension of the multiple linear regression analysis or the use of regression analysis to estimate the causal relationship among variables (casual model) predetermined by the theory. Path analysis cannot determine causality and cannot be used as a substitute by the researchers to see the causal relationship among variables. Causality among variables has been established with a model based on a theoretical foundation. Path analysis is used to determine the relationship among three or more variables and cannot be used to confirm or reject the hypothesis of causality imaginary.

6. Result and Discussion

A. Path Statistical Analysis

Table 2. The result of testing DFL (X1) and DR (X2) on β (Z) (Variable X1, X2 On The Variable Z)

Independent Variable	Standardized Coefficients beta	t count	Probability	Information
X1 (DFL)	0.398	3.362	0.002	Significant
X2 (DR)	0.518	4.375	0.000	Significant
Dependent Variable	: Z (Market Risk (β))			
R	: 0.722			
R square (R ²)	: 0.522			
Adjusted R square	: 0.495			
F count	: 19.623			
Probability F count	: 0.000			

Source: Processed Data from IDX (2014)

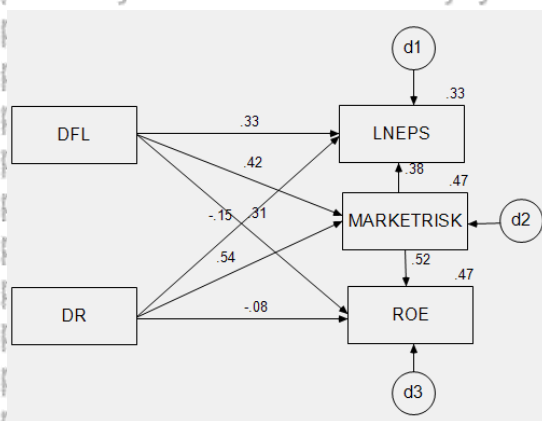


Figure 2. The Result Of Path Coefficient

Table 3. Path Coefficient value

variable	Estimate
MARKET RISK ← DFL	0.418
MARKET RISK ← DR	0.545
LNEPS ← DFL	0.334
ROE ← DFL	0.310
LNEPS ← DR	-0.146
ROE ← DR	-0.076
ROE ← MARKET RISK	0.523
LNEPS ← MARKET RISK	0.383

Source: Processed Data from IDX (2014)

The coefficient of determination is a coefficient that shows the influence or contribution of endogenous and exogenous variables on variables of one endogenous to other endogenous variables. Here are the test results that demonstrate the value of the coefficient of determination:

Table 4. Coefficient value of determination

Variable	R ²
Degree of Financial Leverage (DFL), Total Debt Ratio (DR) and Market Risk (β) ⇒ Return On Equity (ROE)	0.494
Degree of Financial Leverage (DFL), Total Debt Ratio (DR) and Market Risk (β) ⇒ Earning Per Share (EPS)	0.334
Degree of Financial Leverage (DFL) and Total Debt Ratio (DR) ⇒ Market Risk (β)	0.522

Source: Processed Data from IDX (2014)

B. Direct Effect, Indirect Effect And Total Effect

Table 5. Direct Effect

	DR	DFL	MARKET RISK
MARKET RISK	0.545	0.418	0.000
ROE	-0.076	0.310	0.523
LNEPS	-0.146	0.334	0.383

Source: Processed Data from IDX (2014)

Table 6. Indirect Effect

	DR	DFL	MARKET RISK
MARKET RISK	0.000	0.000	0.000
ROE	0.285	0.219	0.000
LNEPS	0.208	0.160	0.000

Source: Processed Data from IDX (2014)

Table 7. Total Effect

	DR	DFL	MARKET RISK
MARKET RISK	0.545	0.418	0.000
ROE	0.209	0.529	0.523
LNEPS	0.062	0.494	0.383

Source: Processed Data from IDX (2014)

7. The Result of Hypothesis Testing

Table 8. The Hypothesis Result Testing Of Direct Effect

Variable	Estimate	S.E.	C.R.	P
MARKET RISK < DFL	.036	.010	3.454	.000
MARKET RISK < DR	.965	.215	4.495	.000
LNEPS < DFL	.196	.092	2.126	.033
ROE < DFL	.028	.012	2.224	.026
LNEPS < DR	-1.794	2.078	-.863	.388
ROE < DR	-.141	.280	-.503	.615
ROE < MARKET RISK	.549	.171	3.216	.001
LNEPS < MARKET RISK	2.646	1.268	2.086	.037

Source: Processed Data from IDX (2014)

Based on the table 8, the result of hypothesis testing in this research are as follows:

H1 : Hypothesis 1 shows that there is significant effect from the variable of *Degree of Financial Leverage (X1)* on variable of *Earning Per Share (EPS) (Y1)*. The result of the calculation from the variable of *Degree of Financial Leverage (X1)* effect on the variable of *Earning Per Share (EPS) (Y1)* shows



that there is a significant result (with a probability value of $0.033 < 0.05$) and critical ratio is equal to $2.126 > 1.96$. It can be concluded that the research results support the hypothesis 1. The *Degree of Financial Leverage variable (X1)* has positive influence on *Earning Per Share (EPS) (Y1)* with coefficient of *Degree of Financial Leverage (DFL)* which affects the *Earning Per Share (EPS)* as much as 0.196. In other words if *DFL* increases 1 unit, then the *Earning Per Share (EPS)* will also increase to 0.196. If *DFL* decreases 1 unit, then the *Earning Per Share (EPS)* will also decrease to 0.196.

H2 : Hypothesis 2 shows that there is significant effect from the variable of *Degree of Financial Leverage (X1)* on variable of *Return On Equity (Y2)*. The result of the calculation from the variable of *Degree of Financial Leverage variable (X1)* effect on the variable of *Return On Equity (Y2)* shows that there is a significant result (with a probability value of $0.026 < 0.05$) and critical ratio is equal to $2.224 > 1.96$. It can be concluded that the research results support the hypothesis 2. The *Degree of Financial Leverage variable (X1)* has a significant effect and positive influence on *Return On Equity (Y2)* with coefficient of *Degree of Financial Leverage (DFL)* which affects the *Return On Equity (Y2)* as much as 0.028. In other words, if *DFL* increases 1 unit, then the *Return On Equity (Y2)* will also increase to 0.028. If *DFL* decreases 1 unit, then the *Return On Equity (Y2)* will also decrease to 0.028.

H3 : Null hypothesis 3 shows that there is no significant effect from the variable of *Debt to Total Assets (DR) (X2)* on variable of *Earnings Per Share (EPS) (Y1)*. The result of the calculation from the variable of *Debt to Total Assets (DR) (X2)* effect on the variable of *Earnings Per Share (EPS) (Y1)* shows that there is no significant result (with a

probability value of $0.388 > 0.05$) and critical ratio is equal to $-0.863 < 1.96$. This result suggests that the researcher has to receive H_0 or null hypothesis that there is no effect from *Debt to Total Assets (DR) (X2)* on *Earnings Per Share (EPS) (Y1)* and the researcher has to reject alternative hypothesis or H_3 suggests that there is effect of *Debt to Total Assets (DR) (X2)* on *Earnings Per Share (EPS) (Y1)*. It can be concluded that the research results does not support the hypothesis 3. Because, in the year of research, the value of *Earnings Per Share (EPS)* greater than *Debt to Total Assets (DR)*. According to Brealey, et al (2001, p. 98-99) "A firm can achieve a higher growth rate without raising external capital if (1) it plows back a high proportion of its earnings, (2) it has a high return on equity (ROE), and (3) it has a low debt-to-asset ratio. The firm issues only enough debt to keep its debt-equity ratio constant. The sustainable growth rate is the highest growth rate the firm can maintain without increasing its financial leverage." The *Debt to Total Assets (DR)* has no significant effect and shows a negative influence on the variable of *Earnings Per Share (EPS)* with coefficient of *Debt to Total Assets (DR)* which affects the *Earning Per Share (EPS)* as much as -1.794. In other words if *Debt to Total Assets (DR)* increases 1 unit, then the *Earnings Per Share (EPS)* will be decreased is equal to -1.794. If *Debt to Total Assets (DR)* decreases 1 unit, then the *Earnings Per Share (EPS)* will increase to -1.794.

H4 : Null hypothesis 4 shows that there is no significant effect from the variable of *Debt to Total Assets (DR) (X2)* on variable of *Return On Equity (Y2)*. The result of the calculation from the variable of *Debt to Total Assets (DR) (X2)* effect on the variable of *Return On Equity (Y2)* shows that there is significant result (with a probability value of $0.615 > 0.05$) and critical ratio



is no equal to $-0.503 < 1.96$. This result suggests that the researcher has to receive H_0 or null hypothesis that there is no effect from Debt to Total Assets (DR) (X2) on Return On Equity (ROE) (Y2) and the researcher has to reject alternative hypothesis or H_4 suggests that there is effect of Debt to Total Assets (DR) (X2) on Return On Equity (ROE) (Y2). It can be concluded that the research results does not support the hypothesis 4. Because, in the year of research, the value of Return On Equity (ROE) greater than Debt to Total Assets (DR). According to Brealey, et al (2001, p. 98-99) "A firm can achieve a higher growth rate without raising external capital if (1) it plows back a high proportion of its earnings, (2) it has a high return on equity (ROE), and (3) it has a low debt-to-asset ratio. The firm issues only enough debt to keep its debt-equity ratio constant. The sustainable growth rate is the highest growth rate the firm can maintain without increasing its financial leverage." The Debt to Total Assets (DR) (X2) has no significant effect and negative influence on Return On Equity (Y2) with coefficient of Debt to Total Assets (DR) (X2) which affects the Return On Equity (Y2) as much as -0.141 . In other words if Debt to Total Assets (DR) increases 1 unit, then the Return On Equity (ROE) will decrease to -0.141 . If Debt to Total Assets (DR) increases 1 unit, then the Return On Equity (ROE) will decrease to -0.141 .

H5 : Hypothesis 5 shows that there is significant effect from the variable of Degree of Financial Leverage (X1) on variable of market risk (β) (Z). The result of the calculation from the variable of Degree of Financial Leverage (X1) effect on the variable of market risk (β) (Z) shows that there is significant result (with a probability value of $0.000 < 0.05$) and critical ratio is equal of $3.454 > 1.96$. It can be concluded that the research result

support the hypothesis 5. The Degree of Financial Leverage (X1) has significant effect and positive influence on market risk (β) (Z) with coefficient of Degree of Financial Leverage (X1) which affects the market risk (β) (Z) as much as 0.036 . In other words if Degree of Financial Leverage (X1) increases 1 unit, then the market risk (β) (Z) will also increase to 0.036 or 3.6 . If Degree of Financial Leverage (X1) decreases 1 unit, then the market risk (β) (Z) will also decrease to 0.036 .

H6 : Hypothesis 6 shows that there is a significant effect from the variable of Debt to Total Assets (DR) (X2) on variable of market risk (β) (Z). The result of the calculation from the variable of Debt to Total Assets (DR) (X2) effect on the variable of market risk (β) (Z) shows that there is significant result (with a probability value of $0.000 < 0.05$) and critical ratio is equal to $4.495 > 1.96$. It can be concluded that the research results support the hypothesis 6. The Debt to Total Assets (DR) (X2) has significant effect and positive influence on market risk (β) (Z) with coefficient of Debt to Total Assets (DR) (X2) which affects the market risk (β) (Z) as much as 0.965 . In other words, if Debt to Total Assets (DR) (X2) increases 1 unit, then the market risk (β) (Z) will also increase to 0.965 . If Debt to Total Assets (DR) (X2) decreases 1 unit, then the market risk (β) (Z) will also decrease to 0.965 .

H7 : Hypothesis 7 shows that there is a significant effect from the variable of market risk (β) (Z) on variable of Earning Per Share (EPS) (Y1). The result of the calculation from the variable of market risk (β) (Z) effect on the variable of Earning Per Share (EPS) (Y1) shows that there is significant result (with a probability value of $0.037 < 0.05$) and critical ratio is equal of $2.086 > 1.96$. It can be concluded that the research results support the hypothesis 7. The market



risk (β) (*Z*) has significant effect and positive influence on *Earning Per Share (EPS)* (*Y1*) with coefficient of *market risk* (β) (*Z*) which affects the *Earning Per Share (EPS)* (*Y1*) as much as 2.646. In other words if *market risk* (β) (*Z*) increases 1 unit, then the *Earning Per Share (EPS)* (*Y1*) will also increase to 2.646. If *market risk* (β) (*Z*) decreases 1 unit, then the *Earnings Per Share (EPS)* (*Y1*) will also decrease to 2.646.

H8 : Hypothesis 8 shows that there is a significant effect from the variable of *market risk* (β) (*Z*) on variable of *Return On Equity* (*Y2*). The result of the calculation from the variable of *market risk* (β) (*Z*) effect on the variable of *Return On Equity* (*Y2*) shows that there is significant result (with a probability value of $0.001 < 0.05$) and critical ratio is equal to $3.216 > 1.96$. It can be concluded that the research results support the hypothesis 8. The *market risk* (β) (*Z*) has significant effect and positive influence on *Return On Equity* (*Y2*) with coefficient of *market risk* (β) (*Z*) which affects the *Return On Equity* (*Y2*) as much as 0.549. In other words if *market risk* (β) (*Z*) increases 1 unit, then the *Return On Equity* (*Y2*) will also increase to 0.549 or 54.9 %. If *market risk* (β) (*Z*) decreases 1 unit, then the *Return On Equity* (*Y2*) will also decrease to 0.549.

8. Conclusion

Based on the conducted calculation of path analysis are:

1. The variable of Degree of Financial Leverage (DFL) (*X1*) has a positive significant effect on the variable of Earning Per Share (EPS) (*Y1*).
2. The variable of Degree of Financial Leverage (DFL) (*X1*) has a positive significant effect on the variable of Return On Equity (ROE) (*Y2*).
3. The variable of Debt Ratio (DR) (*X2*) has a negative and a non significant effect on

the variable of Earning Per Share (EPS) (*Y1*).

4. The variable of Debt Ratio (DR) (*X2*) has a negative and a non significant effect on the variable of Return On Equity (ROE) (*Y2*).
5. The variable of Degree of Financial Leverage (DFL) (*X1*) has a positive significant effect on the variable of market risk (β) (*Z*).
6. The variable of Debt Ratio (DR) (*X2*) has a positive significant effect on the variable of market risk (β) (*Z*).
7. The variable of market risk (β) (*Z*) has a positive significant effect on the variable of Earning Per Share (EPS) (*Y1*).
8. The variable of market risk (β) (*Z*) has a positive significant effect on the variable of Return On Equity (ROE) (*Y2*).

9. Recommendation

1. For the management of the company, the results show that the DFL has a significant effect on EPS, ROE and market risk, DR has a significant effect on market risk, but there is no significant effect on ROE and EPS. The value of the highest critical ratio is the DR on the market risk which is 4.495. Then the company should be able to add value to the DR so that it will get the maximum benefit.
2. Increased DR will provide a positive contribution to Return on Equity and indirectly increases the Earning per Share, and increasing DR will increase market risk.
3. The result of this study can be used as a reference for other studies that uses the independent variables, namely DR and DFL, an intervening variable, namely market risk and the dependent variables, namely EPS and ROE. The amount of contribution variable of the Degree of Financial Leverage (DFL) (*X1*) and Debt to Total Assets (DR) (*X2*) on market risk (β) (*Z*) which is 0.495. This means that 49.5 % variable market risk (β) (*Z*) will be influenced by the independent variables. Then, a percentage of 50.5 %



is influenced by other variables that are not addressed in this research. To improve this condition, future studies should be able to make additions to the dependent variables, the intervening variables and the independent variables used.

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