The Influence of Return on Asset, Return on Equity, Earning per Share, and Economic Value Added towards Market Value Added

(A Study of Manufacturing Industry of Food and Beverages Subsector Listed on the Indonesian Stock Exchange from 2016-2019)

A THESIS

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

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INTERNATIONAL PROGRAM

ACCOUNTING STUDY PROGRAM

FACULTY OF BUSINESS AND ECONOMICS

UNIVERSITAS ISLAM INDONESIA

YOGYAKARTA

2020

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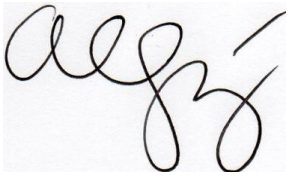

Alfi Zakiya, S.Kom., S.Pd. June 23, 2020

EXAMINERS' APPROVAL

THE INFLUENCE Of RETURN On ASSET, RETURN On EQUITY, EARNING PER SHARE, And ECONOMIC VALUE ADDED TOWARDS MARKET VALUE ADDED

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A BACHELOR DEGREE THESIS

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Defended before the Board of Examiners
on June 25, 2020 and Declared Acceptable

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ACKNOWLEDGMENT

In the name of Allah, the most Gracious and the Most Merciful.

All praises to Allah SWT and His blessing for the completion of this thesis.I thank Allah for all the opportunities, trials and strength that have been showered on me to finish writing the thesis. I experienced so much during this process, not only from the academic aspect but also from the aspect of personality. My humblest gratitude to the holy Prophet Muhammad, whose way of life has been a continuous guidance for me.

First and foremost, I would like to sincerely thank my supervisor Ayu Chairina Laksmi, S.E., M.App.Com., M.Res., Ak., Ph.D. for her guidance, understanding, patience and most importantly, she has provided positive encouragement and a warm spirit to finish this thesis. It has been a great pleasure and honour to have her as my supervisor.

My deepest gratitude goes to all of my family members. It would not be possible to write this thesis without the support from them. I would like to thank my dearest father Agus Warsono and my mother Masnun Rani.

I offer my special my beloved friends who were with me and support me through thick and thin, Puti, Visa, Ummi, and Dina. Also, my colleagues all members of Accounting International Program 2012 for their motivation, prayers and their sincere help during my studies.

I also want to extend my thanks to Admin Staff in the Faculty of Economics International Program, Islamic University of Indonesia, especially, Mrs. Alfi and Mr. Ahmad for their help and support in the administrative works.

May Allah shower the above cited personalities with success and honor in their life.

DECLARATION OF AUTHENTICITY

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

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

Yogyakarta, June 23, 2020

Ashanti Rizky Hutami

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ABSTRACT

The purpose of this study is to determine whether each change in value of return on assets, return on equity, earnings per share, and economic value added will be followed by a pattern of changes in the value of the market value added. This research is a type of quantitative descriptive research with statistical tests. The population used by the researcher is a manufacturing company listed on the Indonesia Stock Exchange (IDX) period 2016-2019. The technique used in determining the sample of this study is purposive sampling. The data analysis technique used in this study is multiple linear regression analysis because to find out whether there is a significant influence between the independent variables on the dependent variable with the help of SPSS for windows version 21. Test results show that economic value added dan return on have no significant effect on market value added, while return on equity dan earning per share have significant effect on market value added. This shows that the independent variables are jointly able to explain the dependent variable.

***Keywords**: return on equity, earnings per share, economic value added, market value added*

ABSTRAK

Tujuan penelitian ini untuk mengetahui apakah setiap perubahan nilai dari *return on asset, return on equity, earning per share, dan economic value added* akan diikuti pola oleh perubahan nilai dari market value added. Penelitian ini merupakan jenis penelitian yang bersifat deskriptif kuantitatif dengan uji statistik. Populasi yang digunakan oleh peneliti adalah perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia (BEI) periode 2016-2019. Teknik yang digunakan dalam penentuan sampel penelitian ini adalah *purposive sampling.* Teknik analisis data yang digunakan dalam penelitian ini adalah analisis regresi linier berganda karena untuk mengetahui apakah ada pengaruh signifikan antara v*ariabel independen terhadap variabel dependen* dengan bantuan program *SPSS for windows versi 21*. Hasil uji menunjukkan bahwa *economic value added dan return on asset tidak berpengaruh signifikan terhadap market value added*, sedangkan *return on equity dan earning per share* berpengaruh signifikan terhadap *market value added*. Hal ini menunjukkan bahwa *variabel independen* secara bersama-sama mampu menjelaskan *variabel dependen*. Kata Kunci: *return on equity, earning per share, economic value added, market value added*

CHAPTER 1

INTRODUCTION

1.1 Background

Manufacturing is one of the sectors that are listed on the Indonesian Stock Exchange. The manufacturing sector comprised of several industries categories, one of which is consumer goods. Consumer goods is an industry that aims to produce a variety of consumer goods. The consumer goods sector has good prospects and is resistant to crisis. This sector serves daily requirements for society. It is expected that the sales and profit received by companies in this sector will be stable or increased so that investors are more interested in investing in this sector. Based on Indonesia Finance Today (2019), the consumer goods sector is supporting the manufacturing sector. The consumer goods industry has a value of 34,33% of the establishment's manufacturing index.

The consumer goods sector is subdivided into five sub-sectors, namely foods and beverage, tobacco, pharmaceuticals, cosmetics and household products, and household appliances. Among these five subsectors, the food and beverages subsector showed a higher production growth compared to other sub-sectors, as illustrated in table 1.1 below.

Table 1.1

The Average of Manufacturing Industry Growth Year 2016-2019

No	Group of Industry	Average Growth (%)
1	Food and beverage subsector	15,19
2	Tobacco subsector	12,73
3	Pharmaceuticals subsector	10,21

Source: Data processed from BPS Indonesia, 2019

The companies in every sector are established with a clear objective (Martono & Harjito, 2016). Determining this objective is essential as these will set the direction and strategy of the company. The primary objective of a company is to achieve the maximum benefit or profit as much as possible. The second objective of a company is to increase the shareholders' wealth by increasing the price and value of the company or through financial income. Maximizing shareholders' wealth means maximizing the flow of dividends distributed to the shareholders. The final objective of the company is to maximize the value of the company(Martono & Harjito, 2016)

Companies that have publicly registered in a stock market their value are reflected in the price of shares outstanding in the market.

> *"The total value of the stock in a corporation is simply equal to the value of the owner's equity. Therefore a more general way of starting our goal is K Maximize the market value of the owner's equity* (Ross et al., 2016 : 23)

The company's value can be determined from the comparison of the company's performance. Maximizing company's value means maximizing shareholders' wealth. The company's value is determined by the internal performance and external performance. The internal performance can be divided into traditional standards (accounting based) and economic based (Altaf, 2016). In traditional standards or accounting-based, company's value is a function of various criteria such as ROA (Return on Asset), ROE (Return on Equity), PER (Price to Earnings Ratio), EPS (Earning per Share), et cetera. In the economic-based model, the company's value is a function of the power of assets profitability, potential investors, and the difference between the rate of return and the weighted average cost of capital (WACC) (Magni, 2016).

EVA (Economic Value Added) also includes an internal measure of performance. Unlike ROA that used accounting-based, EVA is measured based on economic measures. The external performance of companies can be measured using MVA (Market Value Added), which is a new method based on value-based management..

The EVA were popularized and developed by Stern Stewart & Company (Stewart, 1991). To put it simply, EVA can be interpreted as a reduction in total cost of capital to the Net Operating Profit After Tax (NOPAT). EVA is considered as a simple performance measure and provides a real view of earning wealth for shareholders and also helps managers in making investment decisions and identifying opportunities for improving and paying attention to short term interests like long term ones (Altaf, 2016).

EVA is different from other performance measures such as ROA and ROE, which only take into account the company's earnings without consideration of the cost of capital. The companies that have positive EVA means that the rate of return are higher than the level of capital costs, which increase shareholders' wealth. If EVA is negative, it means the company has not been efficient in empowering its resources.

EVA was considered to be better in measuring performance compared to ROA (Return on Assets), ROE (Return on Equity), PER (Price to Earnings Ratio), EPS (Earning per Share). EVA as a new measurement tool has advantages over traditional measuring tools. EVA excluded the cost of capital to measure the performance of the company, while in the traditional measurement tools, capital costs have not been taken into account (Anthony, Robert N Govindarajan, 2016). Moreover, EVA has the ability to unite the three important management functions, namely capital budgeting, incentive compensation, and performance apparaisal (Higgins, 2016)

Akgun et al. (2018) stated that:

> *"EVA is* more *than a performance measure; it is the focal point of management system and a mindset. EVA affords the company the ability to establish clear, accountable links between strategic thinking, capital investment, day-to-day operating decisions, and shareholder value."*

Another alternative method that can be used to measure the company's performance is Market Value Added (MVA), which is also a measurement of added value. This concept was also developed by Stern Stewart & Co (1990). MVA is the cumulative result of the company's performance generated by various investment that has been done or will be done. Thus, if MVA is increased, the company is success in maximizing shareholder value with the allocation of appropriate resources. MVA is a measure of the company's external performance.

Akgun et al. (2018) argued that the MVA and EVA have relationships although it has a different calculation method, whereas MVA is an absolute measure. Whether a company has positive or negative MVA depends on the level of rate of return compared to the cost of capital. This also applies to EVA, if EVA is positive, it means MVA is also positive and vice versa.

Nakhaei & Hamid (2013) investigated the relationship between economic value added (EVA), return on assets (ROA), and Return On Equity (ROE) with market value added (MVA) in Tehran Stock Exchange (TSE). The results of their research indicated that there are meaningful correlation between EVA, and ROE with MVA, but there is no meaningful association between ROA and MVA. Futhermore, Nakhaei and Hamid (2013) research show that EVA is effective measure in describing the firm's stock market value.

Other research conducted by Yaqub et al. (2015) nvestigated the relationship between EVA and stock market performance (MVA) for selected Pakistan firms to check the superiority of EVA over the traditional accounting-based performance measure in association with MVA. This research shows that there is a positive and linear relationship between EVA and MVA throughout the period under review. Market to Book value (MB), Earning per Share (EPS), Operating Cash Flow (OCF), Return On Equity (ROE), Return on Asset (ROA), Return on Capital Employee (ROCE) also reveal positive correlations with MVA. Thus, the hypothesis from Yaqub et al. (2015) is about significance of EVA in dominating traditional performance measures in explaining EVA has not proved yet despite there is positive relationship between EVA and MVA. Also investors in Pakistan still prefer traditional accounting measures while making decision and company valuation.

Based on the data from Indonesian Central Bureau of Statistics on 2015-2018, the growth of Gross Domestic Product (GDP) on expenditure, it appears that household consumption is dominant contribution. As for contribution from the expenditure side, household consumption have the most contribution, by more than 50% compared to other components. The growth of GDP components year 2015-2018 is described below in table 1.2 below:

Table 1.2

The growth of GDP components year 2015-2018

Year	GDP at constant price	Components of GDP at constant prices by expenditure		
		Household Consumption	Government Consumption	Export - Import
2015	8.982.517,10	4.651.018,44	775.397,99	1.862.938,95
2016	9.434.613,40	4.881.630,67	774.304,53	1.818.133,16
		4,96%	-0,14%	-2,41%
2017	9.912.928,10	5.126.307,97	790.756,40	1.964.819,17
		5,01%	2,12%	8,07%
2018	10.425.397,30	5.651.454,19	828.682,96	2.198.262,32
		10,24%	4,80%	11,88%

Source: Data processed from BPS Indonesia (in Billion Rp and Percent), 2018

Considering the consumption have the biggest contribution in Indonesia's GDP which also meant that consumption has great potential in business sector. Thus, this study will focus on the consumer good sector companies in Indonesia.

This research is different from previous studies since this research employs a different type of data. The previous research from Nakhaei and Hamid (2013) and Yaqub et al. (2015) focused on developed countries, whilst this research focuses on Indonesia, which is a developing country.

This research will conduct an analysis related to the Return on Assets (ROA), Return On Equity (ROE), Earning per Share (EPS), and Economic Value Added (EVA) in conjunction with the Market Value Added (MVA) in the period 2016-2019 in the manufacturing industry subsector food and beverages companies listed on the Indonesia Stock Exchange. Thus, this thesis chose the following title:

The influence of Return on Asset, Return on Equity, Earnings per Share, and Economic Value Added towards Market Value Added: A study of the manufacturing

industry subsector food and beverages listed on the Indonesian Stock Exchange from 2016 to 2019.

1.2 Problem Formulation

Based on the background of discussed above, the problem formulation of this research are:

1. Does Return on Assets, Return on Equity, Earning per Share, and Economic Value Added simultaneously have an influence towards Market Value Added?
2. Does Return on Assets have an influence towards the Market Value Added?
3. Does Return On Equity have an influence towards the Market Value Added?
4. Does Earning per Share have an influence towards the Market Value Added?
5. Does Economic Value Added have an influence towards the Market Value Added?

1.3 Research Objectives

The objectives of the research are:

1. To investigate the influence of Return on Assets, Return on Equity, Earning per Share and Economic Value Added simultaneously towards Market Value Added.
2. To investigate the influence of Return on Assets towards Market Value Added.
3. To investigate the influence of Return on Equity towards Market Value Added.
4. To investigate the influence of Earning per Share on Market Value Added.
5. To investigate the influence of Economic Value Added on Market Value Added.

1.4 Scope of Research

The scope of this research is to:

1. Investigate food and beverages companies listed on the Indonesia Stock Exchange from 2016 to 2019
2. Investigate the aforementioned companies which publishes the audited financial statements each year during the period of 2016 to 2019.

1.5 Research Contributions

This research aims to contribute to the following parties:

1. For investors

   This research aims to give information to investors and prospective investors about a company's performance measurement, to determine better investment decisions.

2. For future researchers

   This research aims to give information as reference and study material for further research on assessing a company.

1.6 Systematics of Writing

This study consists of five chapters, each of them has its own focus and purposes. These are the descriptions of each chapter in details:

Chapter 1: Introduction

This chapter describes the background of the study, problem formulation, research objective, research contribution and systematics of writing.

Chapter 2: Literature Review

This chapter explains previous studies, hypotheses formulation, and the theoretical framework.

Chapter 3: Research Method

This chapter describes population and sample, data collection method, research variables, analysis technique, hypotheses test and discussion.

Chapter 4: Data Analysis and Discussion

This chapter displays the result of analyzed data by using statistical tools such as data quality test, description of respondents, descriptive test analysis, classical assumption test, and multiple regression analysis. The last part of this chapter is discussion of hypotheses test.

Chapter 5: Conclusion and Recommendations

This chapter explains conclusion of this research, limitation of research and recommendation for future research.

CHAPTER 2

LITERATURE REVIEW

2.1 Signaling Theory

The signaling theory is rooted in pragmatic accounting theory, which focuses its attention on the influence of information on the changes of information users' behaviour. One of the information can be used as a signal is an announcement made by an issuer. This announcement will be able to influence the rise and fall of the price of the issuer's securities that provided the announcement (Suwardjono, 2016).

The signaling theory explained why a firm has the impetus to provide financial statement information to the external party. A company is encouraged to provide information to external parties because there is an information asymmetry between the company and outsiders. The company knows more about the company and its future potential than the outsider (investors and creditors). Lack of information on behalf of the outsiders about the company causes them to protect themselves by reserving a low price for the company. A company can increase company value by reducing this information symmetricity. One way to reduce the asymmetric information is signalling outsiders, one of which is to provide reliable financial information and reduce uncertainty about the upcoming prospects of the company (Wolk et al., 2017).

The signaling theory explains that a good financial statement is a signal or a sign that the company has also been operating well. Good signals will be responded well by other parties. Information published as an announcement will signal investors in making investment decisions. If the announcement contains a positive value, it is expected that there will be a market reaction

that can be seen from the stock price movement when the market has received the announcement.

The change in stock trading volume indicates the market reaction. When the information is announced, and all market participants have received the information, market participants first interpret and analyse the information as a good signal for investors. There is a change in the volume of stock trading.

2.2 Market Value Added

The definition of Market Value Added (MVA) according to Brigham and Houston (2014) is the difference between the market value of a company's equity and the book value as shown on the balance sheet, with the market value is calculated by multiplying the stock price by the number of shares outstanding. Meanwhile, according to Hanafi dan Halim (2016), MVA is the difference between market value and book value of shares.

The definition of MVA according to Gallager and Andrew (2013, p. 109) is as follows:

"Market Value Added (MVA) is the market value of the firm, debt plus equity, minus the total amount of capital invested in the firm. MVA is similar to the market to book ratio (M/B). MVA focuses on total market value and total invested capital, whereas M/B focuses on the per share stock price and invested quality capital."

It means that Market Value Added (MVA) is the market value of the firm, debt plus equity, minus the total amount of capital invested in the company. MVA is similar to Market to Book Ratio (M/B). MVA focuses on the total market value and the amount of capital invested, while M/B focuses on price per share and invested quality capital.

According to Brigham and Houston (2014) the formula of MVA calculations is as follows:

MVA = Equity Market Value – Equity Book Value

Whereas:

Equity Market Value = Stock Price x Number of Outstanding Shares

Equity Book Value = Ss presented in the Balance Sheet

In calculating the MVA there are two possible outcomes will be obtained (Crysdayanti, 2019) :

1. Positive MVA, if its market value, which is a function of the capital market's expectation towards future free cash flows, discounted on the cost of capital, exceeds the invested capital.
2. Negative MVA, if the value of the investment under management is less than the capital left to the firm by the capital market.

2.3 Return on Asset

Return on Assets (ROA) is one of profitability ratios. In the analysis of financial statements, this ratio is most often highlighted. This is because this ratio shows the success of the firm to generate profits. ROA is able to measure the ability of a firm to generate profits in the past to then be projected in the future. Assets in question is the entire property of the firm, obtained from the capital itself or from foreign capital that has been converted by the firm into corporate assets used for corporate survival.

According to Brigham and Houston (2014, p. 90), "The ratio of net income to total assets measures return on total assets (ROA) after interests and taxes". According to Van Horne dan Waczhowich (2016, p. 157), "ROA measures the overall effectiveness in generating profits with available assets; earning power of invested capital". Horne and Wachowicz (2016) calculated ROA by using the formula of the net income after tax divided by total assets.

Riyanto (2013, p. 336) Riyanto (2011, p. 336) mentioned the term ROA with Net Earning Power Ratio (Rate of Return on Investment/ROI) that is the ability of the capital invested in the overall assets to generate net profits. The net profit he means is the net profit after tax. From the above descriptions, it can be concluded that ROA or ROI in this study is the ratio between net income after interest and tax burden (Earning After Taxes/EAT) that is resulted from the principal activities of the firm with total assets owned by the firm to conduct the firm activities as a whole and to be expressed as a percentage.

2.4 Return on Equity

Return on Equity or capital rentability is the ratio to measure net income after tax with own capital. This ratio shows the efficiency of own capital use. It would be better if the ratio were high. This means that the position of the owner of the firm is getting stronger, and vice versa. According to Riyanto (2013, p. 335) the rate of Return on Equity is a comparison between net income with equity. Further he said that the Return on Equity (ROE) is the ability of the firm in generating profits with its own capital, so that this ROE is mentioned as rentability of own capital.

According to Riyanto (2013, p. 78), ROE is the ability of own capital to generate profits for shareholders and common stock. ROE describes the amount of acquisition of the invested capital or the ability of its own capital to generate profits for preference shareholders and common stock. Another opinion is that of Sartono (2016, p. 168), which explained that ROE is a ratio that measures the ability of firm to obtain profits available to its shareholders.

Return on Equity measures the firm's ability to earn profits available to its shareholders. This ratio is influenced by the size of the firm's debt. If the proportion of the debt is greater than this ratio will also be greater.

2.5 Earnings per Share (EPS)

Earnings Per Share is a measure of the net income earned on each share of common stock (Kieso et al., 2016). EPS is one indicator, which show the performance of the firm, because the size of EPS will be determined by the profit of the company. Profit is a key measure of the success of a company, therefore investors often focus on the amount of Earning per Share (EPS) in conducting stock analysis. The higher the value of EPS, will encourage shareholders as this will yield greater profits for them.

Earnings per Share (EPS) is one of the ratios commonly used in prospectus, presentation material and annual report to the shareholders. It is net profit minus dividends (earnings available to common shareholders) divided by weighted average of outstanding common shares. Earnings per Share (EPS) represents the amount of revenue earned in one period for each outstanding/circulating share (EPS). The figures based on EPS often published to show the performance of firms that sell their shares to the public. Investors and prospective investors hold that EPS contains important information to make predictions about the number of dividends per share and stock price levels in the future, and the EPS is also relevant to assess effectiveness of management and dividend payout policy.

2.6 Economic Value Added (EVA)

EVA is considered as a better performance measurement instrument than traditional measurement tool such as financial ratios. Performance and management achievements measured by financial ratios cannot be accounted for, because the resulting financial ratios depend heavily on the method or accounting treatment used. Basically, EVA is the economic profit a company earns after all capital costs are deducted. (Van Horne & Waczhowich, 2016, p. 395)

According to Brigham and Houston (2014, p. 111) the definition of EVA is as follows:

"EVA is an estimate of a business's true economic profit for the year, and its differ sharply from accounting net profit, in which the accounting profit is not reduced by the cost of equity while in EVA calculations this cost will be eliminated. If EVA is positive, then operating profit after tax exceeds the capital cost needed to generate the profit, and management actions add value to shareholders."

According to Hanafi and Halim (2016 : p. 52), EVA is a performance measure that combines the acquisition of value with the costs to obtain the added value. EVA is a goal of every company, which is to increase the value or value added from the capital that has been invested by shareholders in the company's operations. Therefore, EVA is the difference in net operating profit after tax (NOPAT) with the cost of capital. EVA concept measures the value added by reducing the cost of capital resulted from investments made by the company. Positive EVA (Economic Value Added) indicates that the company succeeds in creating value for the owner of capital because the company is able to produce a rate of return that exceeds its capital level. It is also in line with the goal of maximizing corporate value. Conversely, negative EVA indicates that the value of the firm decreases, as the rate of return is lower than the cost of capital. EVA can be formulated as follows (Nakhaei & Bnti Hamid, 2013):

EVA = NOPAT – Capital Chargers

↓ ↓

Profit & Loss Balance Sheet

Or it can be written in different ways although it basically has the same meaning as follows:

EVA = EBIT – Tax – WACC

Where :

NOPAT : Net Operating Profit After Tax

Capital Chargers : Invested Capital x Cost of Capital

EBIT : Earning Before Tax

Tax : Corporate Income Tax

WACC : Weighted, Average Cost of Capital

2.7 Previous Studies

Some of the previous researches on which this research is based are:

1. Research by Nakhei and Hamid (2013), which examined the effect of EVA, ROA, and ROE on MVA in non-financial companies in Iran for the period 2004-2008. The study used 87 non-financial companies on the Tehran Stock Exchange. The analysis used Pearson correlation and multiple regressions. The results show that EVA and ROE significantly influenced MVA while ROA had no effect on MVA.
2. Akgun et al. (2018) studied examine empirically the relationship between economic value added (EVA), return on assets (ROA), and return on equity (ROE) with market value added (MVA) in Istanbul stock exchange (BIST). This study also examines the performances implemented by Turkish Informatics and Technology Firms during the global financial crisis of 2008–2009. Using the experimental data were drawn from a panel consisting of 13 Turkey firms listed in the BIST, from informatics and technology companies, observed over the 10-year period. Multicollinearity various regression models were examined in order to test the hypotheses included in the examined literature. In the research methodology, such as fixed effects and random effects were examined in order to test our hypotheses proposed. Finally,

evidence is presented that EVA has a negative and significant relationship with MVA, while ROA and ROE have no significant relationship with MVA in the long-term.

3. Larojan & Samuel (2015) compare the EVA and MVA with profitability performance of listed financial companies in CSE. This study used a sample of 20 firms and 2 years observation from the industry of bank, finance and insurance companies and applied the OLS method tot est the content of EVA and MVA measures. Pearson correlation coefficient and regression methods were used to analysis the data. The results indicated that there are significant association between EVA, and ROE with MVA, but there is not significant association between ROA and MVA..
4. Kadar & Rikumahu (2017) examined the relationship between EVA, EPS, ROA, ROE on shareholder value as represented by MVA on telecommunication operator companies which listed on the Indonesia Stock Exchange with the observation period 2011-2016. Results of analysis, independent variables EVA, EPS, ROA and ROE have significant relationship to MVA as dependent variable. On partial correlation analysis result, EVA and ROE have significant relationship to MVA, EPS and ROA have no significant relationship to MVA.

The model for this study is a replication of Nakhei and Hamid's research (2013). The difference of this study with previous studies is the addition of EPS (Earning per Share) as an independent variable and the use of research objects of consumer goods sub-industry manufacturing companies. This is because there are not many studies that specifically examine the consumer goods sub-industry manufacturing companies, so the results of this study are expected to be a benchmark for improving the performance of companies manufacturing consumer goods sub-industry companies. EPS describes the company's ability to generate net profits on every share. If EPS increases, it indicates that the company succeeded in raising the

level of investor prosperity and pushing it to increase the amount of capital invested. Increasing the amount of demand for the company's a pushed the stock price rises. EPS is one of the main things to consider the investors before making decisions about investment. This study uses Indonesian companies listed on the Indonesian Stock Exchange (IDX).

2.8 Hypothesis Development

2.8.1 The Influence of Economic Value Added on Market Value Added

EVA is a measurement of financial performance that is considered in accordance with the expectations of creditors and shareholders, because EVA takes into account the level of risk. The higher the risk or cost of capital accounted by a company, the higher the rate of return that must be given to investors or shareholders. If the company's investment returns rate is not able to cover its risks, the company's EVA will be negative. Conversely, the return on investment is greater than the cost of capital, it will produce a positive EVA (Tampi & Mukuan, 2016)

The signalling theory described the ratio of EVA indicates the performance of the company and served as a signal for investors to make or not to make their investment on the company. The signal is a description of company's performance evaluation. The performance that will be a signal for the investor is judged from the company's resource management, company earnings, assets management, liabilities, and company capital. Based on the above description, it can be concluded that a greater EVA ratio will increase the return that must be given to the investors or shareholders so that EVA will increase.

Study of Nakhei and Hamid (2013) showed that EVA has a significant effect on MVA. Based on the description above, the first hypothesis of this study is:

H1 : EVA has a positive effect on MVA

2.8.2 The Influence of Return on Assets on Market Value Added

One of the performance evaluations that are often used by many stakeholders is the profitability ratio. Probability ratio can be observed through the return of the invested assets and shareholder's investment (Brigham & Houston, 2014). Growth of net sales generated by a company will also generate higher profit so that profit margin on sales can be a measure of the results achieved by a company in a certain period.

The relationship of signalling theory to profitability is that a high profitability indicates a good corporate prospect, hence investors will respond positively to the signal and the value of the firm will also increased (Sintyana & Artini, 2019). It can be inferred that because companies that managed to record increased profit indicates a good performance that will lead to positive sentiment of investors and will eventually make company's stock price increases. Increase price in the market will increase the MVA.

ROA is one measure of corporate profitability. High profitability indicates good corporate prospects so investors will respond positively to the signals and then MVA will increase. It can be understood because the company that managed to book an increased profit indicates that the company has a good performance and it creates a positive sentiment of investors and make the company's MVA increases.

Based on the description above, the second hypothesis of this study is as following:

H2: ROE has a positive effect on MVA

2.8.3 The Influence of Return on Equity on Market Value Added

According to (Van Horne & Waczhowich, 2016) Return on Equity (ROE) measures the ability to generate profit on value of shareholders's book investments. ROE compares

net profit after tax (minus regular stock dividends) with equity that has been invested by shareholders in the company.

Return on Equity (ROE) shows how much profit a company generates against the amount invested by shareholders contained in the balance sheet. This ratio shows the power to generate return on investment based on the shareholder value of books, and is often used in comparing two or more companies within an industry. High ROE often reflects the company's acceptance of good investment opportunities and effective cost management. However, if the company has chosen to apply high debt levels based on industry standards, high ROE is only a result of excessive assumptions of financial risk (Van Horne & Waczhowich, 2016)

ROA is one measure of corporate profitability. High profitability indicates good corporate prospects so investors will respond positively to the signals and then MVA will increase. It can be understood because the company that managed to book an increased profit, indicate that the company has a good performance, so it can create a positive sentiment of investors and make the company's MVA increases.

Nakhei and Hamid (2013) study showed that ROE has a significant effect on MVA. Based on the above description, the third hypothesis of this study is:

H3: ROE has a positive effect on MVA.

2.8.4 The Effect of Earning per Share on Market Value Added

According to signalling theory, a rise in EPS is a signal to investors that the company's management predicts a good income in the future. EPS is a consideration of a company's dividend policy. EPS ratio is used by firms to generate profits, because EPS shows the company's net profit that is ready to be shared with shareholders. The higher the

company's EPS, the more attractive for investors that will facilitate increase of demand for the company's share, which will ultimately allow an increase in the company's share price (Indah & Parlia, 2017).

Higher Earning per Share (EPS) indicates a company is able to generate more net profits per share. Higher EPS will attract investors to invest in the company. Which will affect in the increasing of demand of share and will increase the stock price as well. The increase in stock prices shows the value improvement on the company. On the contrary, if the company has a low EPS indicates a little ability of a company in generating net profit per share. This will cause demand of stock will decrease. The decrease in stock prices shows there is no value improvement in the company. This means that the high of EPS will improve the company's MVA.

Kadar & Rikumahu (2017) study showed that EPS has a significant effect on MVA. Based on the above description, the fourth hypothesis of this study is:

H4: EPS has a significant positive effect on MVA

2.9 Conceptual Framework

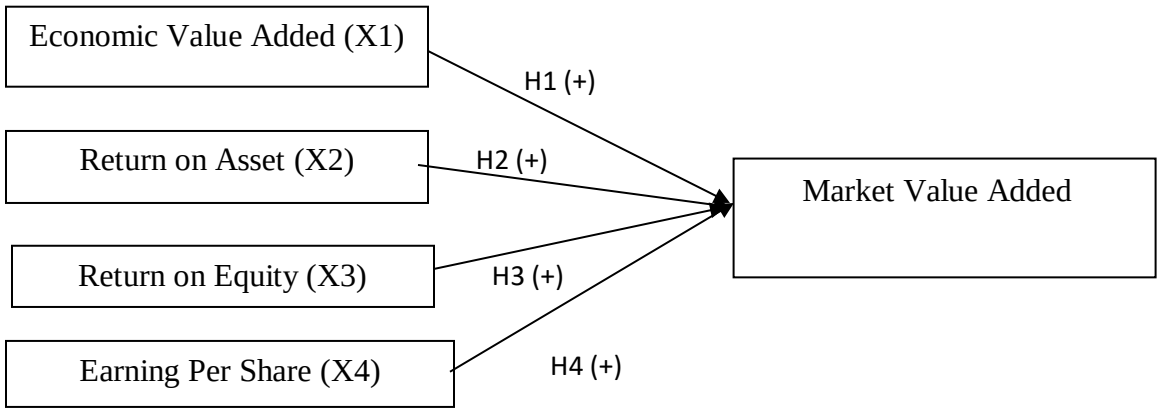

Figure 2.1

Research Model

CHAPTER 3

RESEARCH METHOD

3.1 Population and Determination of Research Sample

The population of this study is all manufacturing industry subsector food and beverages listed in the Indonesian Stock Exchange from the period 2016-2019. The sampling used is purposive. Purposive sampling is a technique of determining samples with specific considerations, which are generally adapted to the purpose or problem of research. The sample of this study is companies listed on the Indonesia Stock Exchange with the following criteria:

1. Manufacturing Companies of Food and Beverages Sub Sector listed on Indonesia Stock Exchange (IDX) 2016-2019.
2. Manufacturing Companies of Food and Beverages Sub Sectors, which publish financial statements and annual reports for the period ending on December 31st for the period 2016-2019.
3. Manufacturing Companies of Food and Beverages Sub Sectors, which have complete of research data.

3.2 Operational Definitions and Variable Measurement

The variables used in this study consist of independent variables namely Economic Value Added (EVA), Return on Assets (ROA), Return on Equity (ROE), and EPS and dependent variable, which is Market Value Added (MVA).

3.2.1 Market Value Added

Market Value Added (MVA) according to Brigham and Houston (Fundamentals of Financial Management, 2014, p. 111) is the difference between the equity market value of a firm and book value as presented in the balance sheet. Market value is calculated by multiplying the price of shares by the number of shares outstanding. The formula for calculating MVA is as follows (Brigham & Houston, 2014):

MVA = Equity Market Value - Equity Book Value

Where:

Equity Market Value = Stock Price x Number of Outstanding Shares

Equity Book Value = as presented in the Balance Sheet

3.2.2 Economic Value Added

According to (Nakhaei & Bnti Hamid, 2013) EVA is operating profit after taxes minus the interest charges on debt and reduced reserves for capital costs. EVA calculation can be formulated as follows (Nakhaei & Bnti Hamid, 2013):

EVA = NOPAT – Capital Chargers

Profit & Loss Balance Sheet

Or it can be written in different ways although it basically has the same meaning as follows:

EVA = EBIT – Tax – WACC

Where:

NOPAT : Net Operating Profit After Tax

Capital Charge : Invested Capital x Cost of Capital

EBIT : Earning Before Tax

Tax : Corporate Income Tax

WACC : Weighted, Average Cost of Capital

3.2.3 Return on Asset

According to Brigham and Houston (Brigham & Houston, 2014, p. 90), "Ratio of net income to total assets measures return on total assets (ROA) after interest and taxes. Calculation of ROA is as follows (Brigham & Houston, 2014, p. 90):

$$\text{ROA} = \frac{Net\ income}{\text{Total assets}}$$

3.2.4 Return on Equity

According to Riyanto (Dasar-Dasar Pembelanjaan Perusahaan, 2011, p. 335) level of Return On Equity is a comparison between net income and equity. Calculation of ROE is as follows (Brigham & Houston, 2014):

$$\text{ROE} = \frac{Net\ income}{\text{Shareholder's equity}}$$

3.2.5 Earnings per Share

Earnings Per Share shows the profit generated by each common share. (Kieso et al., 2016). Calculation of EPS is as follows (Kieso et al., 2016)

$$\text{EPS} = \frac{Income\ available\ to\ common\ shareholders}{\text{Weighted average number of common shares}}$$

3.3 Data Collection Method

This research used secondary data from annual reports of the companies provided by the IDX Corner and www.idx.co.id, as well as data available in the Indonesian Capital Market Directory (ICMD). Secondary data also collected from previous studies and the Indonesian Statistics Bureau (BPS).

3.4 Data Analysis Method

The data analysis in this study consisted of descriptive statistics, classical assumption tests, and multiple regression. For the data analysis in this study used statistical software SPSS version 21.

3.4.1 Descriptive Statistics

Descriptive statistics are used to describe the main financial variables disclosed by the companies in the financial statements for the period 2016 to 2019. The variables to be described using statistic descriptive are Return on Asset (ROA), Return on Equity (ROE), Earning per Share (EPS), Economic Value Added (EVA) and Market Value Added (MVA) of Manufacture Industry Subsector Food and Beverages Listed in Indonesian Stock Exchange from period 2016-2019). The analysis tools for descriptive statistics are average, maximum, minimum, and standard deviation values.

3.4.2 Classic Assumption Test

The classical assumption test is performed to determine whether the model of the regression equation used can be used as the basis of unbiased estimation. Especially for large amounts of data, it is necessary to use the classical assumption test to further convince the suitability among the models of the regression equation. The Classical assumption test consisted of the followings:

1. Normality Test

Normality test aims to test whether or not in the regression model, dependent and independent variables have normal data distribution. In this study the normality test of data used statistical test analysis with Kolmogorov-Smirnov Z (*1-Sample K-S*). The basis for decision-making on Kolmogorov-Smirnov Z (1-Sample K-S) analysis is (Ghozali, 2015):

a. If the value of Asymp. Sig. (2-tailed) is less than 0.05, and then H0 is rejected. This means that the residual data is distributed abnormally.

b. If the value of Asymp. Sig. (2-tailed) is greater than 0.05, then H0 is accepted. This means that the residual data is normally distributed.

2. Multicollinearity

Multicollinearity is a situation in which there is a correlation between independent variables (independent) and each other. In this case, the multicollinearity is indicated when there is a linear relationship between the independent variables in the regression model. To detect the presence or absence of multicollinearity in the regression model it can be seen from the value of tolerance and its opponent, that is Variance Inflation Factor (VIF). Cutoff value commonly used to indicate the presence of multicollinearity is tolerance value < 0.10 or equal to VIF value > 1.

3. Heteroscedasticity Test

The heteroscedasticity test used to test whether in the regression model contains residual variance difference from one observation case to another. If the residual variance

from one observation case to another has a fixed value, then it is called homoscedasticity and if it has a difference then it is called heteroscedasticity. A good regression model is a regression model that has homoscedasticity rather than heteroscedasticity.

The presence or absence of heteroscedasticity is measured by looking at the plot graph between the predicted value of the bound variable (ZPRED) and the residue (SRESID). The basic of its analysis is:

a. If there are certain patterns, such as dots form a regular pattern (wavy, widened then narrowed), then it identifies there has been heteroscedasticity.

b. If there are no clear patterns, and dots spread above and below the number on the Y-axis, there is no heteroscedasticity.

4. Autocorrelation

Autocorrelation can be interpreted as an error of t period interrupt with an error in period t-1 (previously). These assumption deviations usually appear on observation that uses time series. To predict the presence of autocorrelation in a regression model is performed through Durbin Watson test. The D-W value of the multiple regression model is met if the value of du < dw < d4-du (Ghozali, 2015).

3.4.3 Multiple Linear Regression Analysis

Data analysis method is performed by using multiple linear regressions to determine the factors that influence MVA. Multiple linear regression model is shown by the following equation.

$$MVA = \alpha + \beta 1ROA + \beta 2ROE + \beta 3EPS + \beta 4EVA + \varepsilon$$

Whereas:

MVA = Market Value Added

α = Constant

$\beta 1, \beta 2, \beta 3, \beta 4$ = regression coefficient

ROA = Return on Asset

ROE = Return on Equity

EPS = Earning per Share

EVA = Economic Value Added

ε = Error

3.4.5 Coefficient of Determination (R^2) Analysis

The coefficient of determination (R^2) is used to determine how much is the percentage of the dependent variables variation on the model can be explained by the independent variable. The coefficient of determination (R^2) is expressed as a percentage whose value ranges from $0 < R^2 < 1$.

Low value of R^2 means that the ability of the independent variables to explain the variation of the dependent variable is very limited (Ghozali, 2015). A value approaching 1 (one) means that the independent variables provide almost all the information needed to predict the variation of the dependent variables.

3.4.6 Hypothesis Testing

The test of hypothesis in this study is using Partial Test (T test). Partial Test (T test) is used to perform testing to determine the ability of each independent variable in

explaining the behavior of the dependent variable. The steps conducted in this test were (Ghozali, 2015):

1. Compile the null hypothesis (H_0) and the alternative hypothesis (H_1).
   - $H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$, it is expected that independent variables by partial is not significantly influenced the dependent variables.
   - $H_1 : \beta_1 \neq 0$, it is expected that independent variables by partial is significantly influenced the dependent variables.
2. Establish the test criteria, that are:
   a. Reject H_0 if the number of significance is less than $\alpha = 5\%$.
   b. Accept H_0 if the number of significance is greater than $\alpha = 5\%$.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION

4.1 Population and Sample

The object of this research is to examine the profile of companies sampled in this research, namely companies in the food and beverage industry listed on the Indonesia Stock Exchange who had published financial statements consistently for 4 consecutive years from 2016-2019. The population used in this research were 14 food and beverage companies listed on Indonesia Stock Exchange from 2016-2019. The sample of the company is then selected using purposive sampling. The purposive sampling selection obtained 9 companies each year that met the sampling criteria. Therefore, the data processed were 36 (nine companies for four years period) companies.

Table 4.1

Criteria for Sampling Research

No.	Description	Total
1.	Food and beverage companies listed on Indonesia Stock Exchange (BEI) from 2016-2019	**14**
2.	Food and beverage companies that did not issue financial statements and annual reports for the period ended 31 December from 2016-2019	**(5)**
3.	Food and beverage companies that did not have complete research data	**(0)**
	Total sample	**9**

Source: Processed secondary data, 2020

4.2 Descriptive Statistics Analysis

Descriptive statistical analysis is used to provide an illustration or description of data. In this resesarch, descriptive statistical analysis is described by using minimum value, maximum value, average and standard deviation. The results of descriptive statistical analysis in this research can be seen in Table 4.2 below:

Table 4.2

Descriptive Statistics Analysis Results

	n	Minimum	Maximum	Mean	Std. Deviation
MVA	36	425672526628	90413357600000	21457413895393.8360	25143078926849.68
EVA	36	-8424558650873	1061064435123	-442099838012.6666	1746378564910.637
ROA	36	.04	.94	.2447	.23590
ROE	36	.04	1.24	.2705	.31785
EPS	36	27.66	739.00	284.4736	231.37672
Valid n (listwise)	36				

Source: Processed secondary data, 2020

Table 4.2. results show descriptive analysis, the conclusions that can be taken are as follows:

1. The minimum value of Market Value Added amounted to 425672526628 was obtained by PT Sekar Laut Tbk, which means that the lowest market value added value was 425672526628. The maximum value of Market Value Added was 90413357600000 achieved by PT Indofood CBP Sukses Makmur Tbk which means the value of market value added amounted to 90413357600000. The average value of market value added in 2016-2019 amounted to 21457413895393.8360 with a standard deviation of 25143078926849.68. These results can be interpreted that the difference between the market value of a company's equity with the book value as presented in the balance sheet, the market value was calculated by multiplying the price of shares with the number of shares outstanding amounted to 21457413895393.8360.

The standard deviation value indicated that the level of data distribution of Market Value Added was 25143078926849.68.

2. The minimum value of Economic Value added was -8424558650873 which wa achieved by PT Multi Bintang Indonesia Tbk in 2018, the value means that Economic Value Added value was -8424558650873 while the maximum value of Economic Value added was 1061064435123 achieved by PT Multi Bintang Indonesia Tbk in 2017 which means the highest economic value added was 1061064435123. The average value of economic value added in 2016-2020 was -442099838012.6666 with a standard deviation of 1746378564910.637. These results can be interpreted that the ability of the sample company in generating operating income minus the taxes and interest expenses on debt and reduced reserves for capital costs amounted to 442099838012.6666. The standard deviation value indicated that the level of data distribution for economic value added was 1746378564910.637.
3. The minimum ROA value was 0.04 obtained by PT Nippon Sariroti Tbk which means the lowest ROA was 0.04 while the maximum value of ROA was 0.94 achieved by PT Multi Bintang Indonesia Tbk which means the highest ROA value was 0.94. The average value of ROA from 2016-2019 was 0.2447 with a standard deviation of 0.23590. These can be interpreted that the level of ability of the companies to earn profit from the management of their assets was equal to 24.47%. The standard deviation value indicated that the data distribution for ROA is 0.23590.
4. The minimum ROE value was 0.04 achieved by PT Nippon Sariroti Tbk which means the lowest ROE value is 0.04 while the maximum value of ROE was 1.24 was achieved by PT Multi Bintang Indonesia Tbk which means the highest ROE value was 1.24. The average

value of ROE from 2016-2019 was 0.2705 with a standard deviation of 0.31785. This result can be interpreted that the ability of the companies to gain profit from their capital management was equal to 27.05%. The standard deviation value indicated that the data distribution of ROE was 0,31785.

5. The minimum value of EPS was 27.66 achieved by PT Nippon Sariroti Tbk, the value means that the lowest EPS level was 27.66. The maximum value of EPS was 739 achieved by PT Indofood Tbk. The maximum value means that the highest level of EPS value was equal to 739. The average value of the average corporate EPS value from 2016-2019 amounted to 284.4736 with a standard deviation of 231.37672. The average value can be interpreted that the rate of profit generated from one share was equal to 284.4736. The standard deviation value indicated that the rate of data distribution for company value was equal to 231.37672.

4.3 Classic Assumption Test

4.3.1 Normality Test

The normality test is performed to test whether the residual variable has a normal distribution in the regression model. In this research, normality testing was performed using the Kolmogorov-Smirnov statistical test. The result of the normality test using Kolmogorov-Smirnov can be seen in Table 4.3 below:

Table 4.3

Kolmogorov-Smirnov Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
n		36
Normal Parameters[a,b]	Mean	,0086534
	Std. Deviation	233536815457 77,12000000
Most Extreme Differences	Absolute	,333
	Positive	,333
	Negative	-,189
Kolmogorov-Smirnov Z		1,999
Asymp. Sig. (2-tailed)		,001

a. Test distribution is Normal.

b. Calculated from data.

Source: Processed Secondary Data, 2020

From Table 4.3, the result of the Kolmogorov-Smirnov test shows Asymp. Sig. (2-tailed) value of 0.001. Therefore, it can be concluded that the residual data in this regression model was not normally distributed because the value of Asymp. Sig. (2-tailed) was below 0.05. To normalize the data, it is necessary to clean the data from outliers. Result of normality test by using the Kolmogorov-Smirnov test after omission of outlier can be seen in Table 4.4 below:

Table 4.4

Kolmogorov-Smirnov Test Results After Omission of Outlier

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
n		30
Normal Parameters[a,b]	Mean	,0007161
	Std. Deviation	823019202582 6,34600000
Most Extreme Differences	Absolute	,184
	Positive	,184
	Negative	-,160
Kolmogorov-Smirnov Z		1,009
Asymp. Sig. (2-tailed)		,260

a. Test distribution is Normal.

b. Calculated from data.

Source: Processed secondary data, 2020

The result of the Kolmogorov-Smirnov test in Table 4.4 shows Asymp. Sig. (2-tailed) value of 0.260. From that result, it can be concluded that the residual data in this regression model had normally distributed because the value of Asymp. Sig. (2-tailed) was above 0.05.

4.3.2 Test of Multicollinearity

The multicollinearity test was performed to test the correlation between independent variables in the regression model. Multicollinearity test is done by observing the tolerance value and VIF value, if tolerance value > 0.10 and VIF <10, there is no multicollinearity in the regression model. Multicollinearity test results can be seen in Table 4.5 below:

Table 4.5

Multicollinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	EVA	,733	1,364
	ROA	,110	9,072
	ROE	,107	9,306
	EPS	,564	1,772

Source: Processed secondary data, 2020

The multicollinearity test results in table 4.5 above revealed tolerance value > 0.1 and VIF <10. The result can be concluded that there was no multicollinearity issues in this regression model. Therefore, further analysis can be performed.

4.3.3 Heteroscedasticity Test

The heteroscedasticity test is meant to test whether there was a variance inequality of the residual from one observation to another in the regression model. Heteroscedasticity testing was performed using the Glejser test. The Glejser test results can be seen in Table 4.6 below:

Table 4.6

Heteroscedasticity Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4499975374006,154	1840849994501,924		2,445	,022
	EVA	-,395	,690	-,125	-,572	,572
	ROA	-1074500159764 5,117	1294632559344 7,639	-,469	-,830	,414
	ROE	8409691081549,112	9692406769929,416	,497	,868	,394
	EPS	4439541724,150	6079006203,060	,183	,730	,472

a. Dependent Variable: abs

Source: Processed secondary data, 2020

Table 4.6 revealed the result from heteroscedasticity test analysis which shows that the significance values of each independent variable were > 0.05. Therefore, it can be concluded that there was no heteroscedasticity issue found in the regression model and therefore further analysis can be performed.

4.3.4 Autocorrelation Test

The autocorrelation test aims to test whether there is a correlation between independent variables in the linear regression. This phenomenon leads to a consequence that confidence intervals become wider and the variance and standard error will be interpreted too low. Solid regression is free of autocorrelation (Ghozali, 2011). The result of the autocorrelation test is as follows:

Table 4.7

Autocorrelation Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.735[a]	.541	.467	8864188090687.82000	2.210

a. Predictors: (Constant), EPS, EVA, ROA, ROE

b. Dependent Variable: MVA

Source: Processed secondary data, 2020

The result in Table 4.7 above reveals the resulting Watbin Durbin value of 2.210. This value is then compared with the DW table value for 30 samples, 4 independent variables and 5% confidence level at the lower limit value (dl) = 1.1426 and the upper limit (du) = 1.7386. Since the DW value of 2.210 lies between the upper limit (du) = 1.7386 and (4-du) = 2.2614, it can be concluded there was no autocorrelation.

4.4 Multiple Linear Regression Analysis

Multiple linear regression analysis was used to test the effect of independent variables consisted of EVA, ROA, ROE, and EPS to the dependent variable of ie MVA. The results of multiple regression analysis in this research can be seen in Table 4.8 below:

Table 4.8

Results of Multiple Linear Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3932980062626.135	2743825715730.094		1.433	.164
	EVA	-.314	1.029	-.048	-.305	.763
	ROA	-27164867958432.754	19296771162023.758	-.575	-1.408	.172
	ROE	31800918581424.035	14446736573907.736	.910	2.201	.037
	EPS	20281786384.222	9060886870.661	.404	2.238	.034

a. Dependent Variable: MVA

Source: Processed secondary data, 2020

The results of multiple linear regression analysis in table 4.8 reveal the following regression equation:

MVA = 3932980062626.135 -0.314EVA- 27164867958432.754ROA + 31800918581424.035ROE + 20281786384.222EPS

From the results of the regression model equation above, the following can be taken:

1. The value of the intercept constant was 3932980062626.135. This can be interpreted that if the values of all independent variables were 0, the value of MVA will be 3932980062626.135.
2. EVA regression coefficient value was -0.314. This result means that if the EVA variable increase by 1 percent, the MVA will decrease by 0.314 assuming all other independent variables were constant.
3. The value of ROA's regression coefficient was -27164867958432.754. This means that if ROA increases by 1 percent, MVA will decrease by 27164867958432.754 assuming all other independent variables were constant.

4. The value of ROE's regression coefficient was 31800918581424.035. This means that if ROA increases 1 by percent, MVA will also increase by 31800918581424.035 assuming all other independent variables were constant. Perbedaan hasil analisis antara ROA dan ROE disebabkan karena karakteristik perhitungan ROE dan ROA dalam mempengaruhi MVA. ROE (*return on equity*) dapat dihitung dengan rumus Dupont Formula, yang dipengaruhi tiga faktor, profitabilitas (*profitability*), efisiensi operasional (*operational efficiency*) dan utang (*leverage*) sedangkan ROA (*return on asset*) mengacu pada profitabilitas (*profitability*) dan efisiensi operasional (*operational efficiency*)
5. EPS' variable regression coefficient value was 20281786384.222. This means that if EPS increases by 1 percent, MVA will also increase by 20281786384.222 assuming all other independent variables were constant.

4.2.1 Coefficient of Determination (R Square)

The coefficient of determination (R Square) is used to describe the ability of the model in explaining the variations that occur in the dependent variable. By measuring the coefficient of determination, one can determine the amount of independent variables that can explain the dependent variable. The coefficient of determination (R Square) is expressed as a percentage. The value of the correlation coefficient (R Square) will be in the range of 0 < R Square <1. The greater value indicates the more independent variables that are able to predict the variance of the dependent variable. The result of the coefficient of determination analysis can be seen in Table 4.9

Table 4.9

Coefficient of Determination Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.735[a]	.541	.467	8864188090687.82000	2.210

a. Predictors: (Constant), EPS, EVA, ROA, ROE

b. Dependent Variable: MVA

Source: Processed secondary data, 2020

The result of coefficient of determination analysis reveals a value of 0.467. The result can be concluded that the independent variables influenced the regression model of 46.7% while the remaining 53.3% was influenced by other factors which were not included in the regression model.

4.2.2 F Test

The goodness of the fit test is performed using ANOVA (F Test) test. The ANOVA test basically shows whether all the independent variables included in the model have a simultaneous influence on the dependent variable. The result of F test is as follows:

Table 4.10

F Test Result

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2313053055088186200000000000.000	4	5782632637720465600000000000.000	7.359	.000[b]
	Residual	1964345762677294200000000000.000	25	7857383050709178000000000000.000		
	Total	4277398817765480500000000000.000	29			

a. Dependent Variable: MVA

b. Predictors: (Constant), EPS, EVA, ROA, ROE

Source: Processed secondary data, 2020

The result of the F test reveals the Sig F value of 0.000. If sig. F <α = 0.05. The sig value shows that EVA, ROA, ROE, and EPS variables had a simultaneous effect on MVA.

4.5 Hypothesis Testing

Hypothesis testing in this research used t-test. The result of the t-test can be seen in Table 4.11 below:

Table 4.11

Hypothesis Testing Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3932980062626.135	2743825715730.094		1.433	.164
	EVA	-.314	1.029	-.048	-.305	.763
	ROA	-27164867958432.754	19296771162023.758	-.575	-1.408	.172
	ROE	31800918581424.035	14446736573907.736	.910	2.201	.037
	EPS	20281786384.222	9060886870.661	.404	2.238	.034

a. Dependent Variable: MVA

Source: Processed data (2020)

The hypothesis result can be concluded as follows:

1. First Hypothesis Testing

   This hypothesis was tested using the significance and regression coefficient of the EVA variable. The value of the regression coefficient for EVA was -0.314 and the significant value was 0.763. At the level of significance α = 5%, the regression coefficient was not significant because of the significance value of 0.763 > 0.05. It can be concluded that EVA did not have significant effect on MVA. Therefore, the first hypothesis of this research was not accepted.

2. Second Hypothesis Testing

The second hypothesis was tested using the significance value on ROA variable. The value regression coefficient value of ROA was -27164867958432.754 and the significance value was 0.172. At the level of significance α = 5%, the regression coefficient was not significant because the significance value 0.172 > 0.05. It can be concluded that ROA did not have significant effect on MVA; thus, the second hypothesis of this research was rejected.

3. Third Hypothesis Testing

The third hypothesis was tested using the significance value in the regression coefficient of the ROE variable. The regression coefficient value for ROE was 31800918581424.035 and the significance value was 0.037. At the level of significance α = 5%, the regression coefficient was significant because of the 0.037 < 0.05. This value was smaller than the test level value. This shows that the third hypothesis was supported; thus, it can be concluded that ROE had a significant positive effect on MVA.

4. Fourth Hypothesis Testing

The testing of the fourth hypothesis was performed using the significance of regression coefficients on the EPS variable. The value of the EPS regression coefficient was 20281786384.222 and the significance value was 0.034. At the level of significance α = 5%; the regression coefficient was significant because 0.034 <0.05. It can be concluded that EPS had a significant positive effect on MVA; thus, the fourth hypothesis of this research was supported.

4.6 Discussion

4.6.1 The Effect of Economic Value Added on Market Value Added

The results of this research proved that Economic Value Added did not have significant effect on Market Value Added. The higher Economic Value Added will decrease Market value Added.

EVA is a measure of financial performance that is considered as in accord with the expectations of creditors and shareholders. This is because EVA took into account the level of risk. According to Brigham and Houston (2016), although the effects that occur between EVA and MVA are not direct, negative historical EVA allows for negative MVA. Vice versa, if the company's historical EVA is positive, there is a tendency for a positive MVA. Further, Brigham and Houston (2016) added that although a company's EVA historically negative, it is not necessarily that the company's MVA will also be negative. This is because the stock price is the main key in calculating MVA. Therefore, MVA is more affected on the performance expected in the future compared to the company's historical performance. This causes EVA negatively affected MVA.

These results were in accordance to the research of Hermuningsih (2018) dan Rahmawati dan Yunita (2018) which showed that EVA does not have a significant effect on MVA. The results were the same as previous studies because the analysis tools used are the same, namely, multiple regression. While the results of this research were not in accordance with a research by Nakhei and Hamid (2013), which proved that EVA has a significant positive effect on MVA. This was due to differences in the scope of research where this research focused more on food and beverage industry companies in the Indonesia Stock Exchange.

4.6.2 The Influence of Return on Asset on Market Value Added

The results of this research proved that the Return On assets did not have significant effect on Market Value Added. The result proved that the size of the ROA will not affect the market value added. The results of this reseaerch were in line with the research done by Rahmawati dan Yunita (2018).

In fact, when the ROA of a public listed banking company decreases or increases, it will not affect the value of MVA. This was supported by the theory put forward by Bringham and Houston (2016) which said that from the view of the financial ratio, it is not enough to provide information about the creation of wealth and the value of the company related to the capital used. Therefore, it can not be known whether it has managed to create added value or value market at the expense of capital used in performing its business activities. Furthermore, this theory is also supported by Wet and Toit (2006) which said that "financial ratios including profitability ratios, as a measure of shareholder value creation did not have considered capital costs so it is difficult to know whether a company has created added value or not"

The results of this research were in accordance with a research done by Nakhei and Hamed (2018), Mertayasa et al. (2014), which proved that ROA has no effect on MVA. This is due to the analytical tool equation, namely, multiple linear regression. While the results of this research were not in accordance with research done by Mai (2013), which proved taht ROA had a positive effect on MVA. This is due to differences in the scope of research where this research focused more on food and beverage industry companies on the Indonesia Stock Exchange.

4.6.3 The Influence of Return on Equity on Market Value Added

The results of this research proved that the Return on Equity had a significant positive effect on Market Value Added. The greater ROE will increase market value added

According to Horne and Wachowicz (2014: 191), Return On Equity (ROE) measures the power to generate a profit on book value investments of shareholders. ROE compares net after-tax profits (minus regular stock dividends) with equities that have been invested by shareholders in the company.

Return on Equity (ROE) shows how much profit a company makes on the amount invested by shareholders as written in the balance sheet. This ratio shows the ability to generate a return on investment based on the shareholder book value and is often used in comparing two or more companies within an industry. High ROE often reflects the company's acceptance of good investment opportunities and cost-effective management. However, if the company chose to apply high debt levels by industry standards, high ROE is only a result of excessive financial risk assumptions (Horne and Wachowicz, 2014).

ROE is one of many measures of a company's profitability. High profitability shows good corporate prospects, so investors will respond positively to the signal in the increase of MVA. This can be understood, since companies that managed to book increased profit indicates that the company has a good performance hence it can create a positive sentiment of investors and thus make the company's MVA increased.

These results are in accordance with Alipour and Pejman's (2015) research which stated that ROE has a significant effect on MVA. This is due to the analytical tool equation, namely, multiple linear regression. However, this result contradicts with the research done by Akgun et al. (2018) which stated that ROE has no significant impact on MVA. This is due to differences in the scope of the study where this research focused more on food and beverage industry companies on the Stock Exchange.

4.6.4 The Effect of Earning Per Share on Market Value Added

The result of this research proved that Earning Per Share had a positive significant effect on Market Value added. The greater Earning Per Share will increase market value added.

According to signaling theory, the increase in EPS is a signal to investors that the company's management predicts a good income in the future. EPS is a consideration of the dividend policy of a company. EPS ratios are used by firms to generate profits because EPS shows the company's net profit that is ready to be distributed to shareholders. The higher the company's EPS, the more the investors will be attracted to increase the demand for the company's stock, which will eventually increase the company's stock price (Febriyanti, 2015).

Larger earning per Share (EPS) indicates a company can generate more net profits per share. The higher EPS value will attract investors to invest in the company. This will affect the demand of stock and will increase stock price as well. The increase of stock prices show the value creation on the company. Vice versa, if the company has a small EPS, it indicates the lower ability of a company to generate profit per share. This will cause decrease stock in stock demand. The decline in stock prices shows no value creation in the company. This means that his big EPS will improve the company's MVA.

These results are in accordance to Alipour and Pejman's (2015) reseaerch that showed EPS has a significant effect on MVA. Hal ini disebabkan karena persamaan alat analisis yaitu regresi linier berganda. This result contradicts with the research done by Sudiani and Wiksuana (2018), which stated that it was seen in every period when the EPS increased, the company's MVA does not always follow the increase. It showed that there was no influence between EPS and MVA. This is due to differences in the scope of research where this research focused more on food and beverage industry companies on the Indonesia Stock Exchange.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The conclusions that can be drawn from this research are as follows:

1. The results of this research proved that Economic Value Added did not have significant effect on Market value Added. The higher Economic Value Added will not decrease Market value Added.
2. This reseach proved that the Return On Assets did not have significant effect on Market Value Added. The result proved that the size of the ROA will not affect the market value added.
3. The results of this research proved that the Return On Equity had a significant positive effect on Market Value Added. These results proved that the greater ROE will increase Market Value Added.
4. The results of this research proved that Earning Per Share had a significant positive effect of Market Value Added. These results proved that the greater Earning per Share will increase Market Value Added.

5.2 Recommendations

As the implication of the results of this research, the researcher suggested that food and beverage companies can continue to work to encourage ROE and EPS factors to increase their MVA. Universities can also design business policy strategies to accommodate the increase in corporate MVA. The business strategy enhancement to accommodate the company's MVA increase can be done by means of internal measurement of annual operational performance.

5.3 Limitations of Research

This reserach had some limitations that may affect the results of research, among others:

1. This research used samples of food and beverage companies listed on the BEI with a period of study only four years from 2016 to 2019. The result of this study cannot be generalized beyond the selection of the sample and the year's range of research.
2. This reseaerch reveals that the determination coefficient value was 46.7% and there was still 53.7% other independent variables beyond this research model that affect MVA.

5.4 Suggestions

With the consideration of the limitations of the research as explained previously, the researcher suggestions the following for further research:

1. The researcher suggested to augment the sample size of research by using other types of industry and enlarging the duration of the research to expand the generalization of further research.
2. Further research is expected to add other variables such as liquidity and leverage.

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APPENDICES

Appendices 1.1 Calculation of ROA, ROE, and EPS

Stock Code	Equity			
	2016	2017	2018	2019
CEKA	887.920.113.728	903.044.187.067	976.647.575.842	1.131.294.696.834
DLTA	1.012.374.008.000	1.144.645.393.000	1.284.163.814.000	1.213.563.332.000
INDF	43.914.423.000.000	47.102.766.000.000	49.916.800.000.000	54.202.488.000.000
ICBP	18.500.823.000.000	20.324.330.000.000	22.707.150.000.000	26.671.104.000.000
MLBI	820.640.000.000	1.064.905.000.000	1.167.536.000.000	1.146.007.000.000
MYOR	6.265.255.987.065	7.354.346.366.072	8.542.544.481.694	9.899.940.195.318
ROTI	1.442.751.772.026	2.820.105.715.429	2.916.901.120.111	3.092.597.379.097
SKLT	296.151.295.872	307.569.774.228	339.236.007.000	380.381.947.966
ULTJ	3.489.233.494.783	4.197.711.000.000	4.774.956.000.000	5.655.139.000.000

Stock Code	Asset			
	2016	2017	2018	2019
CEKA	1.425.964.152.418	1.392.636.444.501	1.168.956.042.706	1.393.079.542.074
DLTA	1.197.796.650.000	1.340.842.765.000	1.523.517.170.000	1.425.983.722.000
INDF	82.174.515.000.000	88.400.877.000.000	96.537.796.000.000	96.198.559.000.000
ICBP	28.901.948.000.000	26.560.624.000.000	34.367.153.000.000	38.709.314.000.000
MLBI	2.275.038.000.000	2.510.078.000.000	2.889.501.000.000	2.896.950.000.000
MYOR	12.922.421.859.142	14.915.849.800.251	17.591.706.426.634	19.037.918.806.473
ROTI	2.919.640.858.718	4.559.573.709.411	4.393.810.380.883	4.682.083.844.951
SKLT	568.239.939.951	636.284.210.210	747.293.725.435	790.845.543.826
ULTJ	4.239.199.641.365	5.175.896.000.000	5.555.871.000.000	6.608.422.000.000

Stock Code	EBIT			
	2016	2017	2018	2019
CEKA	318.559.366.987	160.979.863.453	136.839.635.762	274.640.420.999
DLTA	540.881.980.000	574.271.361.000	651.285.239.000	596.696.030.000
INDF	8.285.007.000.000	7.362.895.000.000	9.143.020.000.000	9.831.024.000.000
ICBP	4.864.168.000.000	5.221.746.000.000	6.447.921.000.000	7.400.117.000.000
MLBI	2.147.744.000.000	2.271.704.000.000	2.462.707.000.000	1.644.594.000.000
MYOR	2.315.242.242.867	2.460.559.388.050	2.627.892.008.006	3.172.264.551.034
ROTI	443.044.977.388	257.164.701.194	194.414.713.941	356.929.646.877
SKLT	33.606.710.221	41.293.729.217	54.165.842.691	81.239.621.435
ULTJ	888.986.639.228	968.295.000.000	892.565.000.000	1.264.394.000.000

Stock Code	NOPAT			
	2016	2017	2018	2019
CEKA	249.697.013.626	107.420.886.839	92.649.656.775	215.459.200.242
DLTA	254.509.268.000	279.772.635.000	338.129.985.000	317.815.177.000
INDF	5.266.906.000.000	5.097.264.000.000	4.961.851.000.000	5.902.729.000.000
ICBP	3.631.301.000.000	3.543.173.000.000	4.658.781.000.000	5.360.029.000.000
MLBI	982.129.000.000	1.322.067.000.000	1.224.807.000.000	1.206.059.000.000
MYOR	1.388.676.127.665	1.630.953.830.893	1.760.434.280.304	2.039.404.206.764
ROTI	279.777.368.831	135.364.021.139	127.171.436.363	236.518.557.420
SKLT	20.646.121.074	22.970.715.348	31.954.131.252	44.943.627.900
ULTJ	709.825.635.742	718.402.000.000	701.607.000.000	1.035.385.000.000

ROA			
2016	2017	2018	2019
0,223399281	0,115593602	0,117061404	0,19714626
0,451564111	0,428291352	0,427487955	0,41844519
0,100822098	0,083289841	0,094709227	0,102195127
0,168298967	0,196597264	0,187618713	0,191171484
0,944047528	0,90503323	0,852294912	0,567698441
0,179164732	0,164962736	0,149382439	0,166628747
0,151746396	0,05640104	0,044247406	0,076233075
0,05914176	0,064898246	0,072482668	0,102725016
0,209706245	0,187077754	0,160652578	0,191330699

ROE			
2016	2017	2018	2019
0,281215629	0,118954187	0,094864984	0,190453646
0,251398461	0,244418609	0,263307517	0,261885943
0,119935676	0,108215811	0,099402426	0,10890144
0,196277809	0,174331602	0,20516802	0,200967646
1,196784217	1,241488208	1,049052877	1,052401076
0,221647149	0,22176734	0,206078445	0,206001669
0,193919269	0,047999627	0,043598131	0,076478936
0,069714775	0,074684567	0,094194397	0,118153945
0,203433114	0,171141367	0,146934757	0,183087454

EPS			
2016	2017	2018	2019
420	181	156	362
317	349	422	397
739	473	474	559
509	326	392	432
666	627	581	572
61	71	77	89
55,31	28	28,07	49
30,01	34	46,69	65
243	61	60	89

Appendices 1.2 Calculation of EVA

Code Stock	Equity			
	2016	2017	2018	2019
CEKA	887.920.113.728	903.044.187.067	976.647.575.842	1.131.294.696.834
DLTA	1.012.374.008.000	1.144.645.393.000	1.284.163.814.000	1.213.563.332.000
INDF	43.914.423.000.000	47.102.766.000.000	49.916.800.000.000	54.202.488.000.000
ICBP	18.500.823.000.000	20.324.330.000.000	22.707.150.000.000	26.671.104.000.000
MLBI	820.640.000.000	1.064.905.000.000	1.167.536.000.000	1.146.007.000.000
MYOR	6.265.255.987.065	7.354.346.366.072	8.542.544.481.694	9.899.940.195.318
ROTI	1.442.751.772.026	2.820.105.715.429	2.916.901.120.111	3.092.597.379.097
SKLT	296.151.295.872	307.569.774.228	339.236.007.000	380.381.947.966
ULTJ	3.489.233.494.783	4.197.711.000.000	4.774.956.000.000	5.655.139.000.000

Code Stock	Operating Profit			
	2016	2017	2018	2019
CEKA	318.559.366.987	160.979.863.453	136.839.635.762	274.640.420.999
DLTA	540.881.980.000	574.271.361.000	651.285.239.000	596.696.030.000
INDF	8.285.007.000.000	7.362.895.000.000	9.143.020.000.000	9.831.024.000.000
ICBP	4.864.168.000.000	5.221.746.000.000	6.447.921.000.000	7.400.117.000.000
MLBI	2.147.744.000.000	2.271.704.000.000	2.462.707.000.000	1.644.594.000.000
MYOR	2.315.242.242.867	2.460.559.388.050	2.627.892.008.006	3.172.264.551.034
ROTI	443.044.977.388	257.164.701.194	194.414.713.941	356.929.646.877
SKLT	33.606.710.221	41.293.729.217	54.165.842.691	81.239.621.435
ULTJ	888.986.639.228	968.295.000.000	892.565.000.000	1.264.394.000.000

Code Stock	Debt			
	2016	2017	2018	2019
CEKA	538.044.038.690	489.592.257.434	192.308.466.864	261.784.845.240
DLTA	185.422.642.000	196.197.372.000	239.353.356.000	212.420.390.000
INDF	38.233.092.000.000	41.298.111.000.000	46.620.996.000.000	41.996.071.000.000
ICBP	10.401.125.000.000	11.295.184.000.000	11.660.003.000.000	12.038.210.000.000
MLBI	1.454.398.000.000	1.445.173.000.000	1.721.965.000.000	1.750.943.000.000
MYOR	6.657.165.872.077	7.561.503.434.179	9.049.161.944.940	9.137.978.611.156
ROTI	1.476.889.086.692	1.739.467.993.982	1.476.909.260.772	1.589.486.465.854
SKLT	272.088.644.079	328.714.435.982	408.057.718.435	410.463.595.860
ULTJ	749.966.146.582	978.185.000.000	780.915.000.000	953.283.000.000

Code Stock	Short term debt			
	2016	2017	2018	2019
CEKA	504.208.767.076	444.383.077.820	158.255.592.250	222.440.530.626
DLTA	137.842.096.000	139.684.908.000	192.299.843.000	160.587.363.000
INDF	19.219.441.000.000	21.637.763.000.000	31.204.102.000.000	24.686.862.000.000
ICBP	6.469.785.000.000	6.827.588.000.000	7.235.398.000.000	6.556.359.000.000
MLBI	1.326.261.000.000	1.304.114.000.000	1.578.919.000.000	1.588.693.000.000
MYOR	3.884.051.319.005	4.473.628.322.956	4.764.510.387.113	3.726.359.539.201
ROTI	320.501.824.382	1.027.176.531.240	525.422.150.049	1.106.938.318.565
SKLT	169.302.583.936	211.493.160.519	291.349.105.535	293.281.364.781
ULTJ	593.525.591.694	820.625.000.000	635.161.000.000	836.314.000.000

Code Stock	Long term debt			
	2016	2017	2018	2019
CEKA	33.835.271.614	45.209.179.614	34.052.874.614	39.344.314.614
DLTA	47.580.546.000	56.512.464.000	47.053.513.000	51.833.027.000
INDF	19.013.651.000.000	19.660.348.000.000	15.416.894.000.000	17.309.209.000.000
ICBP	3.931.340.000.000	4.467.596.000.000	4.424.605.000.000	5.481.851.000.000
MLBI	128.137.000.000	141.059.000.000	143.046.000.000	162.250.000.000
MYOR	2.773.114.553.072	3.087.875.111.223	4.284.651.557.827	5.411.619.071.955
ROTI	1.156.387.262.310	712.291.462.742	951.487.110.723	482.548.147.289
SKLT	102.786.060.143	117.221.275.463	116.708.612.900	117.182.231.079
ULTJ	156.440.554.888	157.560.000.000	145.754.000.000	116.969.000.000

Code Stock	Asset			
	2016	2017	2018	2019
CEKA	1.425.964.152.418	1.392.636.444.501	1.168.956.042.706	1.393.079.542.074
DLTA	1.197.796.650.000	1.340.842.765.000	1.523.517.170.000	1.425.983.722.000
INDF	82.174.515.000.000	88.400.877.000.000	96.537.796.000.000	96.198.559.000.000
ICBP	28.901.948.000.000	26.560.624.000.000	34.367.153.000.000	38.709.314.000.000
MLBI	2.275.038.000.000	2.510.078.000.000	2.889.501.000.000	2.896.950.000.000
MYOR	12.922.421.859.142	14.915.849.800.251	17.591.706.426.634	19.037.918.806.473
ROTI	2.919.640.858.718	4.559.573.709.411	4.393.810.380.883	4.682.083.844.951
SKLT	568.239.939.951	636.284.210.210	747.293.725.435	790.845.543.826
ULTJ	4.239.199.641.365	5.175.896.000.000	5.555.871.000.000	6.608.422.000.000

Code Stock	Interest Expense			
	2016	2017	2018	2019
CEKA	38.637.097.859	17.972.677.646	13.513.481.927	508.479.558
DLTA	26.951.905.000	32.823.821.000	38.582.346.000	48.237.483.000
INDF	1.574.152.000.000	1.486.027.000.000	2.022.215.000.000	1.727.018.000.000
ICBP	178.970.000.000	153.935.000.000	225.568.000.000	161.444.000.000
MLBI	77.143.000.000	25.237.000.000	34159000000	44576000000
MYOR	356.714.077.463	386.922.167.017	492.638.756.739	355.074.879.758
ROTI	91.584.597.849	91.930.964.348	82.233.618.970	66.295.550.224
SKLT	8.758.342.493	15.547.955.109	17.548.989.760	21.525.483.689
ULTJ	2.057.013.064	1.497.000.000	2.107.000.000	1.661.000.000

Code Stock	Tax Expense			
	2016	2017	2018	2019
CEKA	36.130.823.829	35.775.052.527	30.745.155.584	69.673.049.453
DLTA	72.538.386.000	89.240.218.000	103.118.133.000	94.622.038.000
INDF	2.532.747.000.000	2.497.558.000.000	2.485.115.000.000	2.846.668.000.000
ICBP	1.357.953.000.000	1.086.486.000.000	1.357.953.000.000	2.076.943.000.000
MLBI	338.057.000.000	457.953.000.000	447.105.000.000	420.553.000.000
MYOR	457.007.141.573	555.930.772.581	621.507.918.551	665.062.374.247
ROTI	89.639.472.867	50.783.313.391	59.764.888.552	110.580.263.193
SKLT	6.396.753.750	4.791.040.000	10.383.551.750	14.364.651.250

ULTJ	222.657.146.910	316.790.000.000	247.411.000.000	339.494.000.000
Code Stock	Profit on tax			
	2016	2017	2018	2019
CEKA	249.697.013.626	107.420.886.839	92.649.656.775	215.459.200.242
DLTA	254.509.268.000	279.772.635.000	338.129.985.000	317.815.177.000
INDF	5.266.906.000.000	5.097.264.000.000	4.961.851.000.000	5.902.729.000.000
ICBP	3.631.301.000.000	3.543.173.000.000	4.658.781.000.000	5.360.029.000.000
MLBI	982.129.000.000	1.322.067.000.000	1.224.807.000.000	1.206.059.000.000
MYOR	1.388.676.127.665	1.630.953.830.893	1.760.434.280.304	2.039.404.206.764
ROTI	279.777.368.831	135.364.021.139	127.171.436.363	236.518.557.420
SKLT	20.646.121.074	22.970.715.348	31.954.131.252	44.943.627.900
ULTJ	709.825.635.742	718.402.000.000	701.607.000.000	1.035.385.000.000

NOPAT			
2016	2017	2018	2019
243.791.445.299	107.232.133.280	92.580.998.251	204.458.891.988
441.391.689.000	452.207.322.000	509.584.760.000	453.836.509.000
4.178.108.000.000	3.379.310.000.000	4.635.690.000.000	5.257.338.000.000
3.327.245.000.000	3.981.325.000.000	4.864.400.000.000	5.161.730.000.000
1.732.544.000.000	1.788.514.000.000	1.981.443.000.000	1.179.465.000.000
1.501.521.023.831	1.517.706.448.452	1.513.745.332.716	2.152.127.297.029
261.820.906.672	114.450.423.455	52.416.206.419	180.053.833.460
18.451.613.978	20.954.734.108	26.233.301.181	45.349.486.496
664.272.479.254	650.008.000.000	643.047.000.000	923.239.000.000

Invested Capital			
2016	2017	2018	2019
921.755.385.342	948.253.366.681	1.010.700.450.456	1.170.639.011.448
1.059.954.554.000	1.201.157.857.000	1.331.217.327.000	1.265.396.359.000
62.928.074.000.000	66.763.114.000.000	65.333.694.000.000	71.511.697.000.000
22.432.163.000.000	24.791.926.000.000	27.131.755.000.000	32.152.955.000.000
948.777.000.000	1.205.964.000.000	1.310.582.000.000	1.308.257.000.000
9.038.370.540.137	10.442.221.477.295	12.827.196.039.521	15.311.559.267.273
2.599.139.034.336	3.532.397.178.171	3.868.388.230.834	3.575.145.526.386
398.937.356.015	424.791.049.691	455.944.619.900	497.564.179.045
3.645.674.049.671	4.355.271.000.000	4.920.710.000.000	5.772.108.000.000

(D)			
2016	2017	2018	2019
0,37731947	0,351557838	0,164513001	0,187918089
0,154803106	0,146323922	0,157105782	0,148964106
0,465419946	0,467168567	0,482929981	0,436556134
0,359876262	0,357221936	0,339277536	0,310990011
0,639285146	0,575748244	0,595938537	0,60440912
0,515163949	0,506944193	0,514399327	0,479988317
0,50584615	0,381497944	0,336134046	0,3394827
0,478827032	0,516615737	0,546047296	0,519018662
0,176912203	0,188988535	0,140556719	0,144252743

(rd)			
2016	2017	2018	2019
1,141917769	0,397544875	0,396838214	0,012923838
0,566447997	0,580824453	0,819967385	0,930632182
0,082790622	0,075584979	0,131168768	0,099774519
0,045523918	0,034455891	0,05098037	0,029450636
0,602035322	0,178910952	17,2161892	10,13617257
0,128633012	0,125303697	0,114977554	0,065613428
0,079198899	0,12906369	0,086426414	0,137386395
0,085209439	0,132637655	0,15036585	0,183692387
0,013148848	0,009501142	0,014455864	0,014200344

(E)			
2016	2017	2018	2019
0,62268053	0,648442162	0,835486999	0,812081911
0,845196894	0,853676078	0,842894218	0,851035894
0,534580054	0,532831433	0,517070019	0,563443866
0,640123738	0,642778064	0,660722464	0,689009989
0,360714854	0,424251756	0,404061463	0,39559088
0,484836051	0,493055807	0,485600673	0,520011683
0,49415385	0,618502056	0,663865954	0,6605173
0,521172968	0,483384263	0,453952704	0,480981338
0,823087797	0,811011465	0,859443281	0,855747257

(re)			
2016	2017	2018	2019
0,281215629	0,118954187	0,094864984	0,190453646
0,251398461	0,244418609	0,263307517	0,261885943
0,119935676	0,108215811	0,099402426	0,10890144
0,196277809	0,174331602	0,20516802	0,200967646
1,196784217	1,241488208	1,049052877	1,052401076
0,221647149	0,22176734	0,206078445	0,206001669
0,193919269	0,047999627	0,043598131	0,076478936
0,069714775	0,074684567	0,094194397	0,118153945
0,203433114	0,171141367	0,146934757	0,183087454

(Tax)			
2016	2017	2018	2019
0,126407645	0,24983287	0,249160844	0,244353452
0,221797604	0,241834986	0,233696482	0,229421678
0,3247256	0,328850103	0,333708385	0,325355907
0,27217556	0,234679487	0,225696034	0,279272666
0,256067706	0,257274076	0,267421371	0,258545369
0,247608649	0,254211298	0,260924853	0,245912587
0,242651289	0,272812466	0,319707198	0,318584382
0,236541188	0,172576984	0,24525555	0,242203137
0,238778829	0,306020526	0,260702115	0,246926457

WACC =[(Dxrd)(1-tax)+(E x re)]			
2016	2017	2018	2019
0,55151032	0,181978281	0,128277029	0,156499142
0,28072014	0,273089636	0,320656842	0,329700219
0,090135168	0,08135971	0,093604477	0,090745441
0,137566016	0,1214764	0,148951864	0,145069752
0,718016732	0,603210017	7,939985175	4,958764318
0,157321314	0,156717651	0,14378397	0,130872262
0,126167204	0,065492787	0,048706406	0,082297092
0,067483021	0,092798603	0,104729503	0,129078026
0,16921406	0,140043725	0,127784246	0,158219211

Capital Charge			
2016	2017	2018	2019
508.357.607.292	172.561.517.209	129.649.651.338	183.204.000.618
297.550.590.787	328.023.762.053	426.863.943.790	417.201.457.144
5.672.032.525.702	5.431.827.600.940	6.115.526.250.704	6.489.360.510.264
3.085.903.297.229	3.011.633.929.679	4.041.325.471.425	4.664.421.209.218
681.237.760.524	727.449.564.877	10.406.001.650.873	6.487.338.130.607
1.421.928.331.174	1.636.480.421.105	1.844.345.172.848	2.003.858.390.933
327.926.105.667	231.346.537.252	188.415.286.843	294.224.080.757
26.921.497.869	39.420.016.128	47.750.853.239	64.224.602.259
616.899.307.800	609.928.376.273	628.789.217.235	913.258.374.670

EVA			
2016	2017	2018	2019
-264.566.161.993	-65.329.383.929	-37.068.653.087	21.254.891.370
143.841.098.213	124.183.559.947	82.720.816.210	36.635.051.856
-1.493.924.525.702	-2.052.517.600.940	-1.479.836.250.704	-1.232.022.510.264
241.341.702.771	969.691.070.321	823.074.528.575	497.308.790.782
1.051.306.239.476	1.061.064.435.123	-8.424.558.650.873	-5.307.873.130.607
79.592.692.657	-118.773.972.653	-330.599.840.132	148.268.906.096
-66.105.198.995	-116.896.113.797	-135.999.080.424	-114.170.247.297
-8.469.883.891	-18.465.282.020	-21.517.552.058	-18.875.115.763
47.373.171.454	40.079.623.727	14.257.782.765	9.980.625.330

Appendices 1.3 Calculation of MVA

Code Stock	Stock Price			
	2016	2017	2018	2019
CEKA	2514	940	990	2510
DLTA	5100	5425	6925	4980
INDF	8425	6925	7000	6600
ICBP	8550	8700	9700	9700
MLBI	11950	17850	20200	10650
MYOR	2050	3060	2610	2110
ROTI	1620	1220	1295	1200
SKLT	1045	1150	1500	1610
ULTJ	4250	1280	1270	1425

Outstanding shares			
2016	2017	2018	2019
5.950.000.000	5.950.000.000	5.950.000.000	5.950.000.000
800.659.050	800.659.050	800.659.050	800.659.050
8.780.426.500	8.780.426.500	8.780.426.500	8.780.426.500
5.830.954.000	11.661.908.000	11.661.908.000	11.661.908.000
2.107.000.000	2.107.000.000	2.107.000.000	2.107.000.000
22.358.699.725	22.358.699.725	22.358.699.725	22.358.699.725
5.061.800.000	5.061.800.000	6.186.488.888	6.186.488.888
690.740.500	690.740.500	690.740.500	690.740.500
2.888.382.000	11.553.528.000	11.553.528.000	11.553.528.000

Equity			
2016	2017	2018	2.019
887.920.113.728	903.044.187.067	976.647.575.842	1.131.294.696.834
1.012.374.008.000	1.144.645.393.000	1.284.163.814.000	1.213.563.332.000
43.914.423.000.000	47.102.766.000.000	49.916.800.000.000	54.202.488.000.000
18.500.823.000.000	20.324.330.000.000	22.707.150.000.000	26.671.104.000.000
820.640.000.000	1.064.905.000.000	1.167.536.000.000	1.146.007.000.000
6.265.255.987.065	7.354.346.366.072	8.542.544.481.694	9.899.940.195.318
1.442.751.772.026	2.820.105.715.429	2.916.901.120.111	3.092.597.379.097
296.151.295.872	307.569.774.228	339.236.007.000	380.381.947.966
3.489.233.494.783	4.197.711.000.000	4.774.956.000.000	5.655.139.000.000

MVA			
2016	2017	2018	2019
14.070.379.886.272	4.689.955.812.933	4.913.852.424.158	13.803.205.303.166
3.070.987.147.000	3.198.929.953.250	4.260.400.107.250	2.773.718.737.000
30.060.670.262.500	13.701.687.512.500	11.546.185.500.000	3.748.326.900.000
31.353.833.700.000	81.134.269.600.000	90.413.357.600.000	86.449.403.600.000
24.358.010.000.000	36.545.045.000.000	41.393.864.000.000	21.293.543.000.000
39.570.078.449.185	61.063.274.792.428	49.813.661.800.556	37.276.916.224.432
6.757.364.227.974	3.355.290.284.571	5.094.601.989.849	4.331.189.286.503
425.672.526.628	486.781.800.772	696.874.743.000	731.710.257.034
8.786.390.005.217	10.590.804.840.000	9.898.024.560.000	10.808.638.400.000

Appendices 2

```
REGRESSION
  /MISSING LISTWISE
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  /NOORIGIN
  /DEPENDENT VAR00001
  /METHOD=ENTER VAR00002 VAR00003 VAR00004 VAR00005
  /SCATTERPLOT=(*SRESID ,*ZPRED)
  /RESIDUALS DURBIN
  /SAVE RESID.
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Appendices 2.1 Regression

Notes

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	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT VAR00001 /METHOD=ENTER VAR00002 VAR00003 VAR00004 VAR00005 /SCATTERPLOT=(*SRESID ,*ZPRED) /RESIDUALS DURBIN /SAVE RESID.

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	Additional Memory Required for Residual Plots	216 bytes
Variables Created or Modified	RES_2	Unstandardized Residual

[DataSet0]

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EPS, EVA, ROA, ROE[b]	.	Enter

a. Dependent Variable: MVA

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,735[a]	,541	,467	8864188090687 ,82000	2,210

a. Predictors: (Constant), EPS, EVA, ROA, ROE

b. Dependent Variable: MVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2313053055088186200000000000,000	4	578263263772046560000000000,000	7,359	,000[b]
	Residual	1964345762677294200000000000,000	25	785738305070917800000000000,000		
	Total	4277398817765480500000000000,000	29			

a. Dependent Variable: MVA

b. Predictors: (Constant), EPS, EVA, ROA, ROE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3932980062626,135	2743825715730,094		1,433	,164
	EVA	-,314	1,029	-,048	-,305	,763
	ROA	-2716486795843 2,754	1929677116202 3,758	-,575	-1,408	,172
	ROE	3180091858142 4,035	1444673657390 7,736	,910	2,201	,037
	EPS	20281786384,222	9060886870,661	,404	2,238	,034

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	EVA	,733	1,364
	ROA	,110	9,072
	ROE	,107	9,306
	EPS	,564	1,772

a. Dependent Variable: MVA

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	EVA	ROA	ROE
1	1	3,636	1,000	,02	,02	,00	,00
	2	,753	2,198	,05	,75	,00	,00
	3	,414	2,963	,40	,05	,02	,04
	4	,167	4,672	,44	,07	,01	,01
	5	,030	10,976	,09	,11	,97	,94

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions
		EPS
1	1	,01
	2	,00
	3	,02
	4	,94
	5	,02

a. Dependent Variable: MVA

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation
Predicted Value	4524926828544,0000	3524405703475 2,0000	1213409514640 0,3000	8930870628077 ,34600
Std. Predicted Value	-,852	2,588	,000	1,000
Standard Error of Predicted Value	1724347449344 ,000	7786774659072 ,000	3302701816944 ,601	1504407017857 ,452
Adjusted Predicted Value	-5906038784000 ,0000	4756224553779 2,0000	1124705288875 3,1950	1002384532392 0,65600
Residual	-1395051305369 6,00000	2956074575462 4,00000	,00072	8230192025826 ,34700
Std. Residual	-1,574	3,335	,000	,928
Stud. Residual	-2,160	3,454	,028	1,107

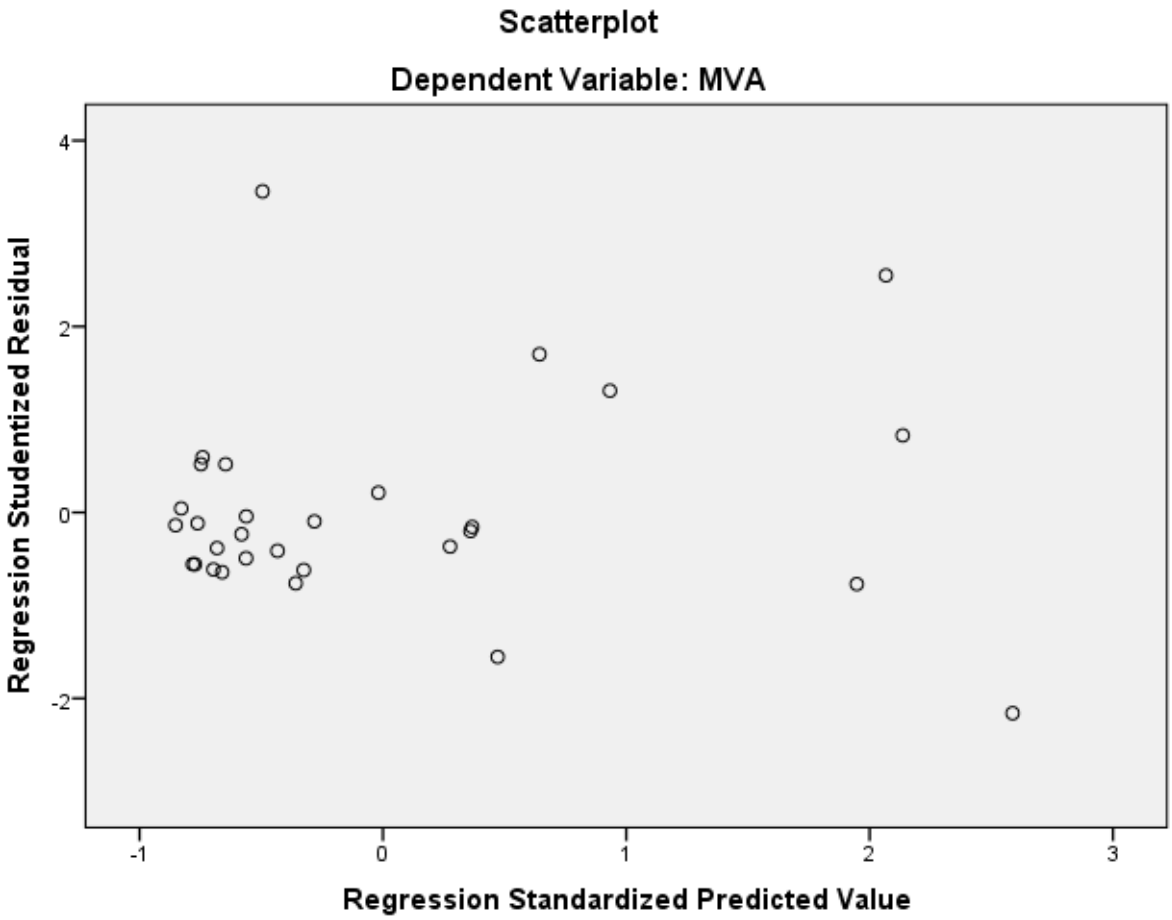
Deleted Residual	-2626870155673 6,00000	4729990440550 4,00000	887042257647, 10730	1335342203952 9,80000
Stud. Deleted Residual	-2,346	4,680	,079	1,293
Mahal. Distance	,131	21,412	3,867	4,888
Cook's Distance	,000	4,395	,204	,806
Centered Leverage Value	,005	,738	,133	,169

Residuals Statistics[a]

	N
Predicted Value	30
Std. Predicted Value	30
Standard Error of Predicted Value	30
Adjusted Predicted Value	30
Residual	30
Std. Residual	30
Stud. Residual	30
Deleted Residual	30
Stud. Deleted Residual	30
Mahal. Distance	30
Cook's Distance	30
Centered Leverage Value	30

a. Dependent Variable: MVA

Appendices 2.2 Charts



NPAR TESTS

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/MISSING ANALYSIS.

NPar Tests

Notes

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a. Based on availability of workspace memory.

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One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	,0007161
	Std. Deviation	8230192025826 ,34600000
Most Extreme Differences	Absolute	,184
	Positive	,184
	Negative	-,160
Kolmogorov-Smirnov Z		1,009
Asymp. Sig. (2-tailed)		,260

a. Test distribution is Normal.

b. Calculated from data.