STOCK VALUATION OF JAKARTA ISLAMIC INDEX LISTED COMPANIES

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DECLARATION OF AUTHENTICITY

"I declare that in this thesis there are no works that have been submitted by other people to obtain a degree in a university, and to the best of my knowledge there are also no works or opinions that have been written or published by other people, except those that are written in this manuscript and mentioned in the references. If in the future it is proven that this statement is not true, I am willing to accept any punishment or sanction in accordance with applicable regulations."

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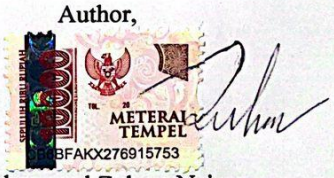

Muhammad Zulvan Naja

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MOTTO

“Good knowledge is knowledge that provides benefits, not just remembered.”

(Imam Syafi’i)

"The most important investment you can make is in yourself".

(Warrent Buffet)

“A great person is one who has the ability to hide distress, so that others think that he is always happy.”

(Imam Syafi’i)

“It is possible for Ordinary people to choose to be Extraordinary.”

(Elon Musk)

“The secret to success is knowing what other people don't know.”

(Aristotle Onassis)

“The only way to do great work is to love what you do.”

(Steve Jobs)

ABSTRACT

This study aimed to find the intrinsic value of the company's share price on the Jakarta Islamic Index 30. The data used in this study were historical data from the company's financial statements and annual reports in 2018-2021. The data is used to calculate the intrinsic value which were compared with the market price using fundamental analysis with the Dividend Discount Model (DDM) and Price Earning Ratio (PER) methods. This study used the research object of company shares on the Jakarta Islamic Index 30 which have been listed on the IDX for the period 2018-2021. The data collection technique in this study used purposive sampling technique. In this study, it was concluded that using the Dividend Discount Model (DDM) constant growth there were eleven stocks in undervalued conditions, and three stock was in overvalued conditions. Using the Dividend Discount Model (DDM) method Non-constant growth there were eleven stocks were in undervalued condition, and three stocks were in overvalued condition, Using Price Earning Ratio (PER) there were eleven stocks are in undervalued condition, and three stocks were in overvalued condition.

Keywords*: Dividend Discounted Model, Price Earning Ratio, stock valuation*

ABSTRAK

Penelitian ini bertujuan untuk mencari nilai intrinsik dari harga saham perusahaan pada Jakarta Islamic Index 30. Data yang digunakan dalam penelitian ini adalah data historis dari laporan keuangan dan laporan tahunan perusahaan pada tahun 2018–2021. Data tersebut digunakan untuk menghitung nilai intrinsik yang akan dibandingkan dengan harga pasar menggunakan analisis fundamental dengan metode *Dividend Discount Model* (DDM) dan *Price Earning Ratio* (PER). Penelitian ini menggunakan objek penelitian saham perusahaan pada Jakarta Islamic Index 30 yang sudah terdaftar di BEI periode tahun 2018– 2021. Teknik pengumpulan data dalam penelitian ini menggunakan teknik purposive sampling. Dalam penelitian ini diperoleh kesimpulan bahwa dengan menggunakan *Dividend Discount Model* (DDM) Pertumbuhan konstan terdapat sebelas saham berada dalam kondisi undervalued, dan tiga saham berada dalam kondisi overvalued. Menggunakan metode *Dividend Discount Model* (DDM) Pertumbuhan tidak konstan terdapat sebelas saham berada dalam kondisi undervalued, dan tiga saham berada dalam kondisi overvalued, Menggunakan *Price Earning Ratio* (PER) terdapat sebelas saham berada dalam kondisi undervalued, dan tiga saham berada dalam kondisi overvalued.

Kata Kunci: Valuasi saham, *Dividend Discount Model, Price Earning Ratio*

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Bismillahirrahmanirrahim

Assalamualaikum Wr.Wb.

In the name of Allah SWT, the beneficent and merciful. All praise is merely to The Mightiest Allah SWT, the lord of the worlds, for the gracious mercy and tremendous blessing that enable me to accomplish this thesis research. This thesis research entitled “Stock Valuation of Jakarta Islamic Index Listed Companies”.

In arraging this thesis is as a final project which is a requirement for obtaining a Bachelor's degree in the Department of Accounting, Faculty of Economics, Universitas Islam Indonesia. In arraging this thesis, the author realizes that there are still many shortcomings and obstacles faced, but thanks to the support, guidance, prayers, and assistance from various parties so that the author is able to overcome these obstacles. Therefore, on this occasion the author would like to express his deepest gratitude to:

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Yogyakarta, 10 March 2023

Author,

Muhammad Zulvan Naja

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CHAPTER I

INTRODUCTION

1.1 Background of the Study

The capital market has an important role in supporting the country's economy. The capital market is a meeting between parties who have excess funds and parties who need funds by trading securities. Thus the capital market can also be interpreted as a market for trading securities that generally have a lifespan of more than one year, such as stocks, bonds and mutual funds while the market to buying and selling of securities occurs is called the stock exchange. The development of information technology allows every capital market player to access and transact from various places, not having to gather on one stock exchange floor but the transaction can be done through online trading (Tendelilin, 2017, p. 25).

An investor always wants a high return with little risk. Returns in stock investment can be in the form of capital gains and dividend.The total gain or loss made on an investment over a period of time is called stock return. It is usually measured as the change in value plus any cash distributed during the period, represented as a percentage of the original period investment value (Gitman & Zutter, 2019). Capital gain is the profit obtained from the difference between the purchase price and the selling price obtained after selling the shares

or it can said that investors get capital gains when selling their shares at a higher price than when buying the shares. Meanwhile, dividends are part of the company's profits distributed by the company to investors in a certain period. Investment is an operation which after thorough analysis can promise security and a satisfactory rate of return (Graham, 1973). If investors want to avoid risk, they must be able to carefully analyze companies that are interesting to invest in. As an investor to get the maximum return as expected, you cannot rely on gambling or just buying and selling shares. This can increase investors risk due to not knowing the condition of the company that is worth buying and not knowing when the shares are worth selling. an investor can know the optimistic and pessimistic sides of the decision to buy an asset in the capital market. This perspective can be seen from the historical portfolio and the risk that will occur if taking risky assets (Olsen, 2014). In making decisions, an investor considers various factors that are expected to be profitable, by analyzing the shares and financial condition of the company where to invest. This analysis is to avoid losses. Therefore, investors need to first assess the stocks to be selected. Stock valuation produces intrinsic value information that will be compared with the stock market price to find a selling or buying position for a company's shares (Tendelilin, 2017). By knowing the intrinsic value of investors can find out which categories of stocks are cheap, right price and expensive, so that investors do not make the wrong decision in buying, holding and selling shares. Intrinsic

value is the true value of a stock that reflects the company's performance. A stock is classified as undervalued if the intrinsic value is greater than the market price. Undervalued stocks are stocks that are considered to have low prices. A stock is classified as overvalued if the intrinsic value is less than the market price. An overvalued stock is one that is overvalued. A stock is classified as correctly valued if the intrinsic value is equal to the market price, this stock is considered to have a fair price.

Stock valuation can be done by fundamental analysis and technical analysis (Hartono, 2017). First's fundamental analysis which is based on the company's financial ratios, obtained from the calculation of ratios on the company's financial statements. Ratio analysis shows the company's performance. Fundamental analysis is a method that uses various ratios to analyze a company, measured by liquidity, activity, solvency, profitability, and market price (Isidore & P.Christie, 2018). Second technical analysis; by paying attention to the trend of rising and falling stock prices on the Stock Exchange (Kousar et al., 2019).Technical analysis is done by looking at historical stock price data to predict stock price movements. Meanwhile, fundamental analysis calculates the intrinsic value of a stock using the company's financial data. For fundamental analysis, there are two approaches to calculating stock value, namely the present value approach and the PER approach (P/E ratio approach).

One of the models to assess the fairness price of shares is to use the dividend approach, namely DDM (Dividend Discount Model). DDM is a model for determining the estimated share price by discounting all dividend flows that will be received in the future (Tendelilin, 2017). The advantage of DDM is that this model is derived from the concept of time value of money and cash flow (Hasanah & Rusliati, 2017). DDM method can present normal representation of the statement that the stock price depends on the expected return (Zoran et al., 2015). In addition, there is also a model for assessing the fairness price of shares is the Price Earning Ratio (PER) is an approach that is more often used by investors and stock analysis. One of the fundamental analyses that can be used to assess the fairness of stock prices is Price Earnings Ratios (PER) (Sharpe et al., 1995). PER is simply the number of times investors value earnings as expressed in the stock price (Jones & P., 2004). Price-earnings ratio (PER) is a ratio that shows how much investors are willing to pay for each share of stock (Halim Perdana Kusuma et al., 2020). It means PER reflects the attractiveness of a stock. The usefulness of the Price Earning Ratio is to see how the market values the company's performance as reflected by Earning Per Share. Companies with high growth rate opportunities usually have a high Price Earning Ratio as well, and this indicates that the market expects future earnings growth. Conversely, companies with low growth rates tend to have a low Price Earning Ratio as well. PER describes the ratio or comparison between stock

prices and company earnings. .The DDM and PER approaches are both based on the concept of present value.

In the capital market there are many industrial sectors that investors can choose to invest their money in, especially the Islamic industry. One of the indexes that contains stocks or sharia companies is the Jakarta Islamic Index 30.The Jakarta Islamic Index is an index that releashed by the Indonesia Stock Exchange. This index consists of 30 stocks that are evaluated every six months with the determination of the index components beginning in January and July each year. This group of stocks are stocks that have a business field that is in accordance with Islamic law.The Indonesian capital market is managed by the Indonesia Stock Exchange, both conventional and sharia. Regarding the Islamic capital market, every securities trading transaction in the capital market is carried out in accordance with the provisions of Islamic sharia (Manan, 2009, p. 77). Sharia securities must meet all the requirements and qualifications to be categorized as sharia securities, where guidelines regarding sharia principles as a requirement for sharia securities can be found in the Fatwa Dewan Syariah Nasional Majelis Ulama Indonesia (DSNMUI). The performance of the Jakarta Islamic Index, which consists of 30 of the most liquid stocks and has a very large capitalization value, is empirically proven to be more stable than the performance of other stock markets. The performance of the Islamic stock

market is highly influenced by the fluctuations that occur in the international stock market. JII experienced fluctuations in response to shocks to all observed macroeconomic and international sharia stock market variables, before stabilizing (Beik et al., 2014).

So that based on the background of the problems that have been stated above, the researchers are interested in conducting research entitled "Analysis of Stock Price Valuation in Making Investment Decisions in the Sharia Capital Market (Study on the Jakarta Islamic Index 30 Year 2018-2021)".

1.2 Problem Identification

1. What is the intrinsic value of shares calculated using the Dividend Discount Model approach on the Jakarta Islamic Index 30 (JII 30) listed on the Indonesia Stock Exchange in 2018-2021?
2. What is the intrinsic value of shares calculated using the Price Earning Ratio (PER) approach on the Jakarta Islamic Index 30 (JII 30) listed on the Indonesia Stock Exchange in 2018-2021?
3. Based on the intrinsic value of shares measured by the PER and DDM methods, which companies are Undervalued, Overvalued or Fairvalued?
4. How to make the right investment decision after knowing the intrinsic value of a company calculated by the PER and DDM methods?

1.3 Problem Limitation

1. Only 14 companies from 30 companies in the Jakarta Islamic Index 30 (JII 30) always distribute dividends every year during the 2018-2021 research period.
2. The closing price used is the closing price per year.

1.4 Research Objectives

1. To determine the intrinsic value of company shares on the Jakarta Islamic Index 30 (JII 30) listed on the Indonesia Stock Exchange in 2018-2021 calculated using the Dividend discount Model (DDM) approach.
2. To determine the intrinsic value of company shares on the Jakarta Islamic Index 30 (JII 30) listed on the Indonesia Stock Exchange in 2018-2021 calculated using the Price Earning Ratio (PER) approach.
3. To determine what companies are undervalued, overvalued or fair-valued based on the calculation results with the PER and DDM approaches.
4. To determine in making the right investment decision whether the stock is worth buying or selling after knowing the company is undervalued, overvalued or fair-valued.

1.5 Research Contribution

1. For Investors

The results of this study can be a reference for investors in determining stock investment decisions that are worth buying or selling, especially on the Jakarta Islamic Index 30 so as to minimize risk and get maximum return.

2. For the Author

   This research can add insight and deepen the knowledge gained during college, especially in the financial sector related to stock valuation analysis for investment decision making and can apply it in real life when analyzing a company for investment decision making on the stock exchange.

3. For Islamic University of Indonesia

   Based on the results of observations at the UII library and UII DSpace website, research related to stock valuation is still minimal, with the results of this research it is hoped that it can add to library references, especially in the field of finance related to stock valuation analysis for decision making and provide additional insight in the investment field for other students.

CHAPTER II

LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Investment

Investment is a commitment to a number of funds or other resources made today, with the aim of obtaining benefits in the future(Tendelilin, 2017). In other words, investment is a commitment to sacrifice current consumption with the aim of increasing consumption in the future. Investment can be related to the investment of funds in real assets such as: land, gold, houses and other real assets or in financial assets such as: deposits, stocks, bonds, mutual funds, and other securities (Tendelilin, 2017). Investment is an operation which after thorough analysis can promise security and a satisfactory rate of return. The term investment can relate to a wide range of activities (Graham, 1973). Investing some funds in real assets (land, gold, machinery or buildings), or financial assets (deposits, stocks, mutual funds, sukuk, or bonds) is an investment activity that is generally carried out. Parties who make investments are called investors. Investors are generally classified into two, namely individual investors and institutional investors. Investment into financial assets can be in the form of direct investment and indirect investment (Hartono, 2017). Direct

investment can be done by buying financial assets that can be traded in the money market, capital market, or derivative market. Meanwhile, indirect investment is done by buying securities from investment companies. Investment companies are companies that provide financial services by selling their shares to the public and using the funds obtained to invest in their portfolios. The difference between investing and speculating is that investing is based on rational decisions from knowledge of past stock prices, price earning ratios, and dividend yields, while speculation is based solely on the hope that future stock prices will be higher. It can be concluded that investment is a comprehensive analytical operation based on rational decisions with the expectation of continuous income in the future(Peng, 2001).

2.1.2 Investment in Islamic Economic Perspective

Islam teaches its followers to strive for a better life in this world and in the hereafter. Obtaining a good life in this world and in the hereafter can ensure the achievement of physical and mental well-being or falah (Aziz, 2010). One way to achieve welfare is by carrying out investment activities.

In Arabic, investment is called *istitsmar* which means "to make fruitful, develop and increase in number". Meanwhile, in the dictionary of financial capital market terms, investment is defined as the investment of

money or capital in a company or project for the purpose of making a profit, although sometimes a loss, because investment is a type of uncertain activity (Arifin, 2003).

From the explanation above, it can be concluded that investment is an investment activity that is expected to get something profitable in the future. Investment is actually a very risky a very risky activity because it deals with two possibilities namely profit and loss.

Therefore, Islam provides signs or limits regarding investments that are allowed and not allowed to be made by business people. Not only that, some things such as knowledge about investment of related sciences must be deepened so that investment activities carried out are not only focused on seeking worldly benefits, but can be of worship value, in order to get inner satisfaction and get the blessings of the world and the hereafter. and get the blessings of the world and the hereafter.

2.1.3 Capital Market

The capital market is a meeting between parties who have excess funds and parties who need funds by trading securities (Tendelilin, 2017) .The capital market can also be interpreted as a market for trading securities that generally have a lifespan of more than one year, such as stocks, bonds and mutual funds. The definition of the capital market is "as a form of market,

the capital market is a means or forum to bring together sellers and buyers" (Hadi, 2013).The capital market is a situation, which provided space and opportunities for sellers and buyers to meet and negotiate in the exchange of capital commodities and commodity groups. This place of capital exchange will later be called the Capital Market (Hadi, 2013).

The capital market is an alternative form of investment for society. Through the capital market, investors can invest in several companies through the purchase of securities traded in the capital market. Meanwhile, companies that are often referred as issuers can obtain the funds needed by offering these securities. The capital market allowed investors to own companies that are healthy and have good prospects. The widespread of ownership will encourage companies to transparency of financial statements. This will be able to push the company towards the creation of good corporate governance (Sunariyah, 2011).

In general, the capital market is defined as an organized place where securities are traded called the Stock Exchange. Stock exchange is an organized system that brings together sellers and buyers of securities systems that brings together sellers and buyers of securities that are carried out either in person or through their representatives. The function of this stock exchange itself, among others, markets continuity and creating fair

securities prices through the mechanism of demand and supply through the supply and demand mechanism (Soemitra, 2009).

2.1.4 Sharia Capital Market

The sharia capital market in the rule that the original law of *muamalah* activities is mubah (permissible), unless there is a clear argument prohibiting it, besides that the sharia capital market is certainly very different from the conventional capital market in which there are many things that are prohibited by Islam (Umam, 2013).

Every securities transaction in the sharia capital market is carried out in accordance with the provisions of Islamic law. The sharia capital market is ideally characterized by the absence of interest-based transactions, dubious transactions and shares of companies doing business in haram activities and goods as well as a systematic effort to make sharia products a means of realizing sharia objectives in the economic and financial fields (Soemitra, 2009).

Sharia capital market was launched in 2003, but sharia capital market instruments have been presented in Indonesia since 1997. This was marked by the launch of Danareksa Syariah on July 3, 1997 by PT Danareksa Invesment Management. Furthermore, BEJ in collaboration with PT Danareksa Invesment Management launched the Jakarta Islamic Index (JII)

on July 3, 2000 which aimed to guide investors who wanted to invest their funds in sharia. With the presence of the index, investors have been provided with stocks that used as a means of investing in accordance with sharia principles (Soemitra, 2009).

2.1.5 Stock

Stocks are proof of partial ownership of a company. Stocks are capital participation in the ownership of a limited liability company (PT) or commonly referred to as an eminten (Hartono, 2017). Common stock represents ownership of a company (Tendelilin, 2017). Common stock is a certificate showing ownership of a company. The form of shares is a single piece of paper that currently use the scripless system has been carried out on the Indonesia Stock Exchange. The form of ownership is no longer in the form of a sheet of shares with the name of the owner. In the form of an account in the name of the owner or scriptless shares (scriptless trading) so the completion of transactions will be faster and easier because it does not go through letters, forms, and convoluted procedures. convoluted procedures (Ibrahim, 2013). To attract other potential investors, the company may issue another class of shares, called preferred shares, which have priority rights over ordinary shares so that these priority rights include

the right to fixed dividends and rights to assets in the event of liquidation However, preferred shares do not have the veto rights that ordinary shares have (Natalia, 2019).

2.1.6 Stock Valuation

There are three types of value, first is book value its the value calculated based on the books of the issuing company, then market value its the value of the stock in the market which indicated by the price of the stock in the market , then intrinsic value of shares its the actual or supposed value of the stock (Tendelilin, 2017). Before making an investment, it is necessary to do stock valuation. Stock valuation analysis aims to find the intrinsic value of a stock then compared to the current stock market price. Stock valuation analysis analysis is carried out by considering the fundamental factors of company (Tendelilin, 2010). Valuation is important because it can be the basis for making decisions that involve transferring large amounts of money or assets from one party to another (Thomas & Gup, 2021). By knowing the market value and intrinsic value, it can be used to determine which stocks are cheap, right value, or expensive (Hartono, 2017, pp. 199–200). A market value that is less than the intrinsic value indicates that the stock is cheap or discount (undervalued), as investors are paying more for the stock than they

should. Conversely, a market value that is greater than its intrinsic value indicates that the stock is selling at an expensive price (overvalued).

There are generally two techniques of stock analysis, namely fundamental and technical analysis. Fundamental analysis analyzes economic factors that can predict the company's condition in the future meanwhile, technical analysis is done by predicting movement of stocks based on price history charts or company history and transaction volume. (Tendelilin, 2017, p. 305). Fundamental analysis has two approaches in calculating stock value, namely the present value approach and the price-to-earnings ratio approach (Tendelilin, 2010). One of the ways that can be used in the present value approach is the Dividend Discounted Model while for the earnings approach can using the Price Earning Ratio method. Dividend Discount Model (DDM) is the simplest model for valuing equity where the value of the stock is the present value of the dividends expected on it (Aswath, 2002). When an investor buys shares in a particular company, the investor acquires the right to receive his proportionate share of future dividend payments made by the company, which is the idea of valuing stocks by calculating the present value of all future dividends (Kirchler & Hoelzl, 2017, pp. 217–244).

2.1.7 Fundamental Analysis

In fundamental analysis, there are two approaches to calculating the intrinsic value of shares, namely the present value approach and the price to earnings ratio approach (Tendelilin, 2010). Fundamental analysis is one way to conduct stock valuation by studying or observing various indicators related to macroeconomic conditions and industry conditions of a company to various financial indicators and company management (Darmadji & Fakhruddin, 2012). Fundamental analysis is performed to estimate future stock prices by estimating the value of fundamental factors that affect future stock prices, and applying the relationship of the variables so as to obtain an estimated stock price. approach used to assess intrinsic stock based on fundamental analysis, namely the Price Earning Ratio (PER) and Dividend Discount Model (DDM) (Jogiyanto, 2006).

a. Dividend Discount Model (DDM)

The dividend discount model is a model for determining stock price estimates by discounting all dividend flows that will be received in the future (Tendelilin, 2017). There are three growth models in the DDM method, namely:

1) Zero Growth Model

This model assumes that the company's dividend payments will not increase. assuming that the amount of dividend payments will not change over time. The stock valuation formula for this model is as follows:

$$\hat{P}_0 = \frac{D_0}{k}$$

$\hat{P}_0$: The intrinsic value of the stock with the dividend discount model

D_0 : Dividend to be received in constant amount during the future dividend payment period

k : Required rate of return

2) Constant Growth Model

The constant growth model can also be referred to as the Gordon model. This model is used to determine the value of shares if the dividend to be paid has grown constantly over an indefinite period of time, where $g_{t+1} = g_t$ for all time t. The equation of this constant growth model can be formulated as follows:

$\hat{P}_0$: The intrinsic value of the stock with the dividend discount model

D_1 : Dividends that will be received constantly over the future dividend payment period

k : Investor is expected rate of return

g : Expected dividend growth rate of the stock

3) Non-constant Growth Model

The non-constant growth model is a model for determination of stock value, if the dividend to be paid is experience inconsistent growth. Determination of stock value shares (Tendelilin, 2017, p. 314) includes four steps calculation:

a. Dividing the dividend stream into two parts: The first part is the non constant dividend stream, and the dividend stream with constant growth is the second part.

b. Calculate the present value of the dividend stream with non-constant growth (the first part).

c. Calculate the present value of all dividend streams with constant growth (second part).

d. Summarize the results of the two present value calculations from both parts of the dividend stream calculation (first and second parts).

The process of determining the value of shares using the non-constant dividend growth model can be completed using the following formula:

$$P_0 = \sum_{t=1}^{n} \frac{D_0(1+g_1)^t}{(1+k)^t} + \frac{D_n(1+g_c)}{(k-g_c)} \frac{1}{(1+k)^n}$$

P_0 : Nilai instrinsik saham

n : Number of years during the supernormal dividend payout period

D_0 : Current dividend (first year)

g_1 : Supernormal dividend growth

D_n : Dividend at the end of the year super normal dividend growth

g_c : Constant dividend growth

k : Required rate of return

2.2 Previous Research

No	Authors and Tittle	Variable	Result
1	(Brilliand et al., 2016) 3 Fundamental Analysis In Stock Valuation Using the Method Dividend Discounted Model and Price Earning Ratio (Study On the Company Multinational Company Sub Cement Sector Which	Stock Valuation, Dividend Discounted Model and Price Earning Ratio	Results with the DDM method, it can be conclude that stocks SMCB, INTP and SMGR were in the condition of undervalued, meaning investors are recommended to buy the stocks the stock. Using PER method, it can be known that stocks SMCB, INTP and SMGR were in an undervalued, meaning investors were recommended

	Listed on the Indonesia Stock Exchange Indonesia Period 2013-2015)		to buy the stock the stock.
2	(Natalia, 2019) Stock Valuation Analysis Using the Dividend Discount Model, Price Earning Ratio and Price to Book Value for Investment Decisions (Empirical Study on Consumer Goods Sector Companies Listed on the Indonesia Stock Exchange in 2013-2017)	Stock Valuation, Dividend Discounted Model, Price Earning Ratio and Price to Book Value	The results of this study indicated that the stock prices of seven consumer goods sector companies in 2014-2017 were undervalued. The right investment decision was to buy among the company's shares. The company's shares were worth buying by long-term investors who paid attention to the company's fundamental variables and who wanted investment returns in the form of dividends. The most accurate approach in stock valuation is the PER approach. This is because the PER approach has the lowest deviation done with the RMSE test.

3	(Sutjipto et al., 2020) Determination of Intrinsic Value: Dividend Discounted Model and Discounted Cash Flow Methods in Indonesia Stock Exchange	Intrinsic Value, Dividend Discounted Model and Discounted Cash Flow	The results of this study indicated that using DDM there were 40 companies that in an undervalued position or only three companies that were considered overvalued while using DCF there were 25 companies that undervalued or 18 companies that considered overvalued.
4	(Rahmawantari & Puspitaningtyas, 2019) P/E Ratio in Stock Valuation for Investment Decision Making Investment Decision (Case Study of Issuer Shares Listed on the Jakarta Islamic Index 2018 Period)	Stock Valuation, Price Earning Ratio, Return On Equity, Dividend Per Share and Earning Per Share	The results of this study indicated the calculation of the intrinsic value of the company's shares incorporated in the JII index and compared with the intrinsic value of the company with its market price, it showed that there were 12 shares of companies that sampled in undervalue conditions. While 14 other stocks were in overvalue condition.

5	(Suryanto, 2016) Stock Valuation Using the Price Earning Ratio Method on LQ45 Index Stocks	Stock Valuation and Price Earning Ratio	The results of this study 10 out of 13 companies, were undervalued. This meant that these stocks were relatively cheap. Meanwhile, 3 stocks were overvalued, which meant that these stocks were classified as expensive.
6	(Sutjipto & Setiawan, 2021) Accuracy of dividend discount model and p/e ratio valuation in Indonesia stock exchange	Dividend Discount Model and Price Earning Ratio	Based on the results of the DDM, and P/E Ratio study, there were 43 companies (86%) that in an undervalued position or only seven companies that overvalued (10%). MOS was greater than 30% with DDM and P/E Ratio of 26 companies (52%).

2.3 Theoretical Framework

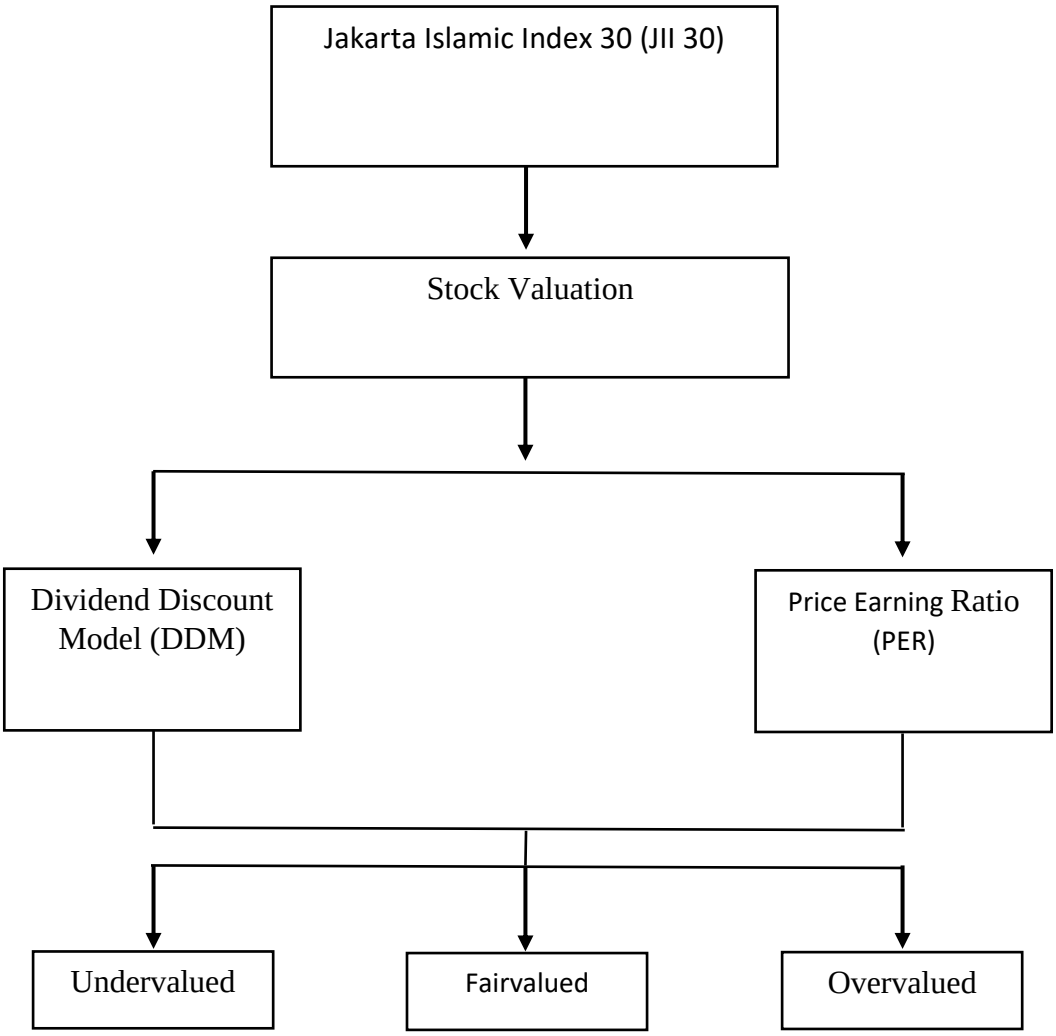

Figure 2. 1Theoretical Framework

CHAPTER III

RESEARCH METHOD

3.1 Research Method

This research used a research method called quantitative. Quantitative research is research that focuses on the measurement scale with an objective nature seen from the point of view of social phenomena that occur (Rahmani, 2016).In research with this quantitative method, the approach chosen is a quantitative approach that is descriptive. Descriptive is defined as a trait that gave a description or description associated with the object to be studied and is assisted by data or samples that have been collected (Sugiyono, 2017).

3.2 Population and sample

The population used in this study are Jakarta Islamic Index (JII) companies listed on the Indonesia Stock Exchange in 2022. Sampling in this study using purposive sampling technique is a sampling technique based on certain considerations. The samples in this study are companies that meet the criteria specified in this study, namely as followed:

1. Jakarta Islamic Index (JII) companies listed on the Indonesia Stock Exchange for the period 2018-2021
2. Jakarta Islamic Index (JII) companies that published complete financial reports during the 2018-2021 period

3. Jakarta Islamic Index (JII) companies that paid dividends in the period 2018-2021

Based on the sampling results of the Jakarta Islamic Index 30 (JII 30) companies that meet these criteria there were 14 companies, as followed:

Table 3. 1

Sample of Jakarta Islamic Index 30 (JII 30) Companies

NO	CODE	Name of Company
1	ADRO	PT Adaro Energy Indonesia Tbk
2	ANTM	PT Aneka Tambang Tbk
3	CPIN	PT Charoen Pokphand Indonesia Tbk
4	ICBP	PT Indofood CBP Sukses Makmur
5	INDF	PT Indofood Sukses Makmur Tbk
6	ITMG	PT Indo Tambangraya Megah Tbk
7	JPFA	PT Japfa Comfeed Indonesia Tbk
8	KLBF	PT Kalbe Farma Tbk
9	MIKA	PT Mitra Keluarga Karyasehat Tbk
10	PTBA	PT Bukit Asam Tbk
11	SMGR	PT Semen Indonesia Tbk
12	TLKM	PT Telkom Indonesia Tbk
13	TPIA	PT Chandra Asri Petrochemical Tbk
14	UNTR	PT United Tractors Tbk

Source Data: IDX

3.3 Technique of Data Analysis

The data source used in this research is a secondary data source. This type of research used descriptive research using a quantitative approach. The data collection technique used in this research was through documentation, which was a data collection technique by searching for documents containing data related to the research topic. In this study, data was obtained in the form of

annual financial reports on the Jakarta Islamic Index 30 companies listed on the Indonesia Stock Exchange for the period 2018-2021 published on the website www.idx.co.id.

3.4 Data Analysis Method

The data analysis method in this study was carried out in several steps, as follows:

1. Dividend Discount Model Method (DDM)

a. Calculating the expected Dividend Growth Rate (g)

g : ROE x retention ratio

ROE : Return On Equity

Retention ratio: 1 – DPR

$$Divident\ payout\ ratio = \frac{Dividend\ per\ share\ (\text{DPS})}{Earning\ per\ share\ (\text{EPS})}$$

Notes:

g : Dividend growth rate

ROE : Return On Equity

DPS : Dividend Per Share

EPS : Earning Per Share

b. Determining Estimated Expected Dividends in the Future

$$D_t = D_0(1 + g)$$

Notes:

D_t : Estimated expected dividend in year at (t)

D_0 : Last year's dividend distributed

g : Dividend growth rate

t : Year at (t)

c. Determine the Expected Return (k).

$$k = \frac{D_0}{P_0} + g$$

Notes:

k : Required rate of return

D_0 : Last year's dividend distributed

P_0 : Current market price

g : Dividend growth rate

d. Calculating the Intrinsic Value of Constant growth DDM.

$$\hat{P}_0 = \frac{D_1}{k - g}$$

Notes:

$\hat{P}_0$: Intrinsic value of shares with constant growth model

D_1 : Dividends that will be received in a constant amount over the future dividend payment period

k : Required rate of return

g : Expected dividend growth rate of the stock

e. Calculating the Intrinsic Value of DDM Non-Constant Growth

$$P_0 = \sum_{t=1}^{n} \frac{D_0(1+g_1)^t}{(1+k)^t} + \frac{D_n(1+g_c)}{(k-g_c)} \frac{1}{(1+k)^n}$$

Notes:

P_0 : Instrinsic value of the stock

n : Total years during the supernormal dividend payout period

D_0 : Current dividend (first year)

g_1 : Supernormal dividend growth

D_n : Dividends at the end of the year of supernormal dividend growth

g_c : Constant dividend growth

k : Investor's required rate of return

2. Price Earning Ratio (PER) Method

The steps in finding intrinsic value using the Price Earning Ratio (PER) approach are as follows:

a. Calculating Dividend Growth Rate (g)

g = ROE x retention ratio

ROE = Net income/Equity

Retention ratio = 1 – DPR

$$Divident\ payout\ ratio = \frac{Dividend\ per\ share\ (\text{DPS})}{Earning\ per\ share\ (\text{EPS})}$$

Notes:

g : Dividend growth rate

ROE : Return on equity

DPS : Dividend per share

EPS : Earning per share

b. Determining Estimated Cash Earning Per Share (EPS).

$$\text{EPS}_1 = \text{EPS}_0 + (1 + \text{g})$$

Notes:

EPS_1 : Estimated EPS

EPS_0 : Last EPS distributed

g : Expected earning growth

c. Determine the Expected Return (k).

$$\text{k} = \frac{\text{D}_0}{\text{P}_0} + \text{g}$$

Notes:

k : Required rate of return

D_0 : Last year dividend distributed

P_0 : Current market price

g : Dividend growth rate

d. Calculating Price Earning Ratio (PER).

$$\text{PER} = \frac{D_1/E_1}{k - g}$$

Notes:

PER : Price Earning Ratio

D_1 : Estimated cash dividend/DPS

E_1 : Estimated EPS

k : Required rate of return

g : Expected earning growth

e. Calculating the Intrinsic Value of Price Earning Ratio.

$$\text{Intrinsic Value} = \text{Estimated EPS x PER}$$

3. Comparing the Intrinsic Value of Shares with the Share Price

After knowing the results of stock valuation, the next is the process of comparing the share price with the intrinsic value of the shares that have been calculated using the dividend discount model and price earnings ratio methods, the criteria used to compare intrinsic value are as follows (Natalia, 2019):

a. If the intrinsic value of the company's shares> current market price, then the stock is considered Undervalued.
b. If the intrinsic value of the company's shares < the current market price, then the shares are considered Overvalued.
c. If the intrinsic value of the company's shares = the current market price, the shares are Fair-valued.

4. Investment Decision Making.

According to Dea (2019), the following criteria are used in making investment decisions:

a. If the intrinsic value of the company's shares is undervalued, it is recommended to make investment decisions to buy, then for those who do not have shares, and increase ownership for those who already own the shares.
b. If the intrinsic value of the company's shares is overvalued, it is recommended to make investment decisions to sell, then for those who do not have it is recommended not to buy.
c. If the intrinsic value of the company's shares is correctly valued, it is recommended to make investment decisions to hold which's the aim is getting benefit from capital gains from stock prices that are expected to increase.

CHAPTER IV

RESEARCH FINDINGS, DISCUSSION, AND IMPLICATIONS

4.1 Research Description

4.1.1 Overview of Jakarta Islamic Index

The Jakarta Islamic Index (JII) is one of the stock indices in Indonesia that calculates the average share price index for stocks that meet sharia criteria. The establishment of this sharia instrument is to support the establishment of the Sharia Capital Market which was then launched in Jakarta on March 14, 2003. The mechanism of the sharia Capital Market is combined with conventional exchanges such as the Jakarta Stock Exchange and the Surabaya Stock Exchange. The purpose of establishing the JII is to increase investor confidence to invest in sharia-based stocks and provide benefits for investors in implementing Islamic sharia to invest in the stock exchange. JII is also expected to support the process of transparency and accountability of sharia-based stocks in Indonesia. JII is the answer to the wishes of investors who wanted to invest in accordance with sharia and also become a performance benchmark in choosing a halal stock portfolio. The following is a brief profile of companies included in the Jakarta Islamic

Index listed on the Indonesia Stock Exchange in 2018-2021 which is the sample of this study:

1. Adaro Energy Indonesia Tbk (ADRO) is an integrated coal mining company based in Indonesia. ADRO and its subsidiaries are engaged in coal mining, coal trading, mining contractor services, infrastructure, coal logistics and power generation activities. The company commenced commercial operations on July 28, 2004. It operates the largest single coal mine in Indonesia and is a supplier of thermal coal in the global market. At its inception in 2004, the company was a limited liability company named PT Padang Karunia. On April 18, 2008 the company changed its name to PT Adaro Energy Tbk in preparation for going public. The vision set for the company is to become as the largest and most efficient coal mining and integrated energy company in Southeast Asia.
2. PT Aneka Tambang Tbk (ANTM) was established as a State-Owned Enterprise in 1968 through the merger of several national mining companies producing a single commodity. ANTM is a state-owned company resulting from the merger of several state-owned mining companies and projects namely the State General Mining Company, the State Bauxite Mining Company, the Tjikotok State Gold Mining Company, the State Precious Metals Company, PT Nickel

Indonesia, the Diamond Project and many more projects under Bapetamb. The company had an initial public offering (IPO) and listed its shares on the Indonesia Stock Exchange and 35% was sold by the government to the public in 1997 to raise money for ferronickel expansion. ANTM has several subsidiaries, namely Asia Pacific Nickel Pty Ltd, PT Indonesia Coal Resources, PT Antam Resourcindo, and PT Mega Citra Utama. Antam is engaged in natural deposits mining, manufacturing, trading, transportation and other related services. High grade nickel ore or saprolite, low grade nickel ore or limonite, ferronickel, gold, silver and bauxite are the company's main commodities. In addition, Antam also provides precious metal processing and refining services and geological services. Its business segments are classified into nickel, gold and refining and other operating segments. Commodities under the nickel segment include ferronickel and nickel ore, while commodities under the gold and refining segment are gold, silver, platinum, and palladium. The other operating segments consist of bauxite and coal.

3. Charoen Pokphand Indonesia Tbk (CPIN) was established on January 07, 1972 as a Penanaman Modal Asing (PMA) and started its commercial operations in 1972. Grand Tribute Corporation is the

ultimate parent entity of the company and its subsidiaries. CPIN is engaged in animal feed, breeding and cultivation of broilers together with their processing, processed foods, preservation of chicken and beef including cold storage units, sales of poultry feed, chicken and beef, and ingredients from animal sources within the territory of the Republic of Indonesia as well as abroad to the extent permitted by established laws. Pokphand's brands include animal feed (HI-Pro, HI-Pro-Vite, Bintang, Bonavite, Royal Feed, Turbo Feed and Tiji) and chicken meat processing products (Golden Fiesta, Fiesta, Champ, Okey, Akumo and Asimo).

4. **Indofood CBP Sukses Makmur Tbk** (ICBP) was established on September 02, 2009 and commenced commercial operations on October 1, 2009. ICBP is the result of the transfer of business activities of Instant Noodle Division and Flavoring Division of **Indofood Sukses Makmur Tbk** (INDF), the controlling shareholder. INDF is an indirect subsidiary of First Pacific Company Limited, a company listed on the Hong Kong Stock Exchange. Mr. Anthoni Salim has an indirect controlling interest in First Pacific Company Limited. ICBP companies are engaged in the manufacture of noodles and food ingredients, culinary food products, biscuits, snacks, nutrition and specialty foods, packaging, trading,

transportation, warehousing and cold storage, management services and research and development. The factories of the Company, its Subsidiaries and Associates are located in Java, Sumatra, Kalimantan and Sulawesi and overseas such as Malaysia, Saudi Arabia, Egypt, Turkey, Kenya, Morocco, Serbia, Nigeria and Ghana.

5. **Indofood Sukses Makmur Tbk** (INDF) was established on August 14, 1990 under the name PT Panganjaya Intikusuma and started its commercial business activities in 1990. The shareholder that owns 5% or more of the shares of Indofood Sukses Makmur Tbk as of February 28, 2022 is First Pacific Investment Management Limited, with an ownership percentage of 50.07%. First Pacific Investment Management Limited is an indirect subsidiary of First Pacific Company Limited, a company listed on the Hong Kong Stock Exchange. Mr. Anthoni Salim has an indirect interest and control in First Pacific Company Limited. INDF Company has subsidiaries that are also listed on the Indonesia Stock Exchange (IDX), among others: **Indofood CBP Sukses Makmur Tbk** (ICBP) and Salim Ivomas Pratama Tbk (SIMP).**Indofood Sukses Makmur Tbk** (INDF) is engaged in processed foods, seasonings, beverages, packaging, cooking oil, grain mills and flour sack manufacturing plants. Indofood's, its Subsidiaries' and Associates' factories and

plantations are located in various parts of Indonesia such as on the islands of Java, Sumatra, Kalimantan, Sulawesi, and overseas, including Malaysia, Saudi Arabia, Egypt, Turkey, Kenya, Morocco, Serbia, Nigeria and Ghana. Indofood and its subsidiaries have products with brands that have been recognized by the public, including instant noodles (Indomie, Supermi, Sarimi, Sakura, Pop Mie, Indomie Cup, Sarimi Gelas and Cap 3 Chicken Egg Noodle), dairy (Indomilk, Cap Enaak, Tiga Sapi, Indomilk Good To Go, Milkuat, Orchid Butter and Indofood Ice Cream); snacks (Chitato, Chitato Lite, Qtela, MaXcorn, Chiki and JetZ); food flavoring (Sambal Indofood, Bumbu Spesial Indofood, Indofood Racik and Indofood Kecap Manis); nutrition & specialty foods (Promina, SUN, Govit and Gowell), beverages (Ichi Ocha, Club, Fruitamin Cocobit, and Indofood Freiss); flour & pasta (Cakra Kembar, Blue Triangle, Blue Key, Red Badge, Taj Mahal and La Fonte); cooking oil and butter (Bimoli, Bimoli Special, Pomegranate, Happy Soya Oil, Palmia, Palmia Butter Margarine, Palmia Cooking Margarine and Amanda).

6. Indo Tambangraya Megah Tbk (ITMG) was established on September 02, 1987 and started its commercial business activities in 1988. The parent company of Indo Tambangraya Megah Tbk is

Banpu Minerals (Singapore) Pte.Ltd. While ITMG's ultimate parent is Banpu Public Company Limited which acquired ITMG in 2007. Banpu Group is a company established in the Kingdom of Thailand. ITMG is engaged in mining, construction, transportation, workshop, trading, industry and services. ITMG's principal activities are in mining and energy through investments in its subsidiaries, which are engaged in coal mining and mining services, coal trading, oil trading, energy marketing, and power generation.

7. Japfa Comfeed Indonesia Tbk (JPFA) was established on January 18, 1971 under the name PT Java Pelletizing Factory, Ltd and started its commercial business activities in 1971. Japfa Comfeed's factories are located in Sidoarjo, Surabaya, Sragen, Cirebon, Tangerang, Cikande, Lampung, Padang, Medan, Banjarmasin, Makassar, Grobogan and Purwakarta. JPFA is engaged in industry (animal food rations; corn milling and cleaning), animal husbandry (broiler breeding; broiler breeding; and layer breeding), trading (wholesale trading of other food and beverages; wholesale trading of live animals; wholesale trading of edible oils and fats; wholesale trading of rubber and plastics in basic form; retail trading of livestock products; retail trading of fishery products; retail trading of livestock; retail trading of animal feed, poultry, fish and pets) and

services. The main brands of Japfa Comfeed's products include animal, fish and shrimp feed (Comfeed and Benefeed), fresh chicken products (Best Chicken), beef (Tokusen Wagyu Beef), chicken sausages (Kingsley, Best Chicken, Dosuka, Tora Duo), retail meat stores (Best Meat, Best Meat Point, Chiomart, Meat Market and Japfa Best Online Hub) and vaccine products (Vaqsimune).

8. Kalbe Farma Tbk (KLBF) was established on September 10, 1966 and started its commercial business activities in 1966. KLBF is engaged in pharmaceutical, trading and representation. In addition, KLBF is also engaged in the development, manufacture and trade of pharmaceutical preparations including drugs for humans and health consumption products. Its business is classified into four segments: prescription drugs, healthcare products, nutritional products and distribution and logistics. The prescription drugs segment produces unbranded generic drugs, branded generic drugs, and patented drugs. Kalbe's also have digital platforms in the business-to-business sector, namely EMOS, MOSTRANS and MOSPAY, have served approximately 150 principals and distributors, more than 18,000 outlets and hospitals, as well as nearly 40 transportation companies across the archipelago, and as the largest digital supply chain ecosystem in the health sector in Indonesia. In addition, Kalbe also

presents a digital platform in the business-to-customer sector, through the telemedicine platform Klikdokter application.

9. **Mitra Keluarga Karyasehat Tbk** (MIKA), formerly PT Calida Ekaprana, was established on January 03, 1995 and started its commercial operations in 1995. MIKA is an Indonesia-based company primarily engaged in the operation of a private hospital group. Currently, MIKA's main business is to operates indirectly through its subsidiaries in the healthcare sector by providing medical services by owning and managing hospitals under the name Mitra Keluarga. Its hospitals offer a number of specialized medical services, including complex surgical procedures, radiology and imaging facilities, fertility treatments, as well as general health care, diagnostic services and emergency departments. Its hospitals are located in several areas in Indonesia, including Bekasi, Jakarta, Surabaya, Depok, Tegal, and Sidoarjo.
10. Bukit Asam Tbk (PTBA) was established on March 02, 1981. PT Bukit Asam Tbk (PTBA) is engaged in coal mining, including general survey, exploration, exploitation, processing, refining, transportation and trading, maintenance of special coal port facilities for internal and external needs, operation of steam power plants for internal and external needs and providing consulting services related

to the coal mining industry and its derivative products, and plantation development. In 1993, PTBA was appointed by the Government of Indonesia to develop a Coal Briquette Business Unit. Currently, the PTBA's Group main activities are in the coal mining industry, including general investigation, exploration, exploitation, processing, refining, transportation and trading, maintenance of special coal port facilities for its own and other parties needs, operation of steam power plants for its own and other parties needs and providing consulting and engineering services in fields related to the coal mining industry and its processed products. In addition, PTBA Group also carries out other activities, namely contracting services, briquette processing, oil palm plantations, and palm oil processing and health services.

11. Semen Indonesia (SMGR) Tbk, a state-owned company formerly known as Semen Gresik.Tbk (SMGR) Persero was established on March 25, 1953 under the name "NV Pabrik Semen Gresik" and began commercial operations on August 07, 1957. The plants of Semen Indonesia Tbk and its subsidiaries are located in East Java (Gresik and Tuban), Central Java (Rembang and Cilacap), Narogong in West Java, Indarung in West Sumatra, Lhoknga in Aceh, Pangkep in South Sulawesi and Quang Ninh in Vietnam. SMGR is engaged

in the cement industry, including production activities, mining of materials needed in the cement industry or other industries, trading, marketing and distribution related to the cement industry as well as providing services for the cement industry and other industries. Currently, the Company's main activity is engaged in the cement industry. Then for the products are marketed at home and abroad.

12. Telekomunikasi Indonesia (Persero) Tbk (TLKM) was originally part of the "Post en Telegraafdienst", which was established in 1884. In 1991, based on Government Regulation No. 25 of 1991, Telkom's status was changed to a state-owned limited liability company (Persero). TLKM is a state-owned enterprise engaged in the telecommunications and network services sector in Indonesia. The company offers a wide range of network and telecommunication services, including basic domestic and international telecommunication services, using cable, wireless fixed line (CDMA) and Global System for Mobile Communication (GSM) services as well as interconnection services used by Other License Operators (OLO). In addition to telecommunication services, Telkom also operates Multimedia businesses such as content and applications, completing their business portfolio called Telecommunications, Information, Media, Edutainment and

Services (TIMES). Telkom Indonesia's subsidiaries are divided into four groups and their business leaders, namely cellular business (Telkomsel), international business (Telin), multimedia business (Telkom Metra), and infrastructure business (Telkom Infra).

13. Chandra Asri Petrochemical Tbk (TPIA) was established on November 2, 1984 under the name PT Tri Polyta Indonesia and began commercial operations in 1993. is a merger between PT Chandra Asri and PT Tri Polyta Indonesia Tbk on January 1, 2011. TPIA is one of the largest petrochemical companies in Indonesia. TPIA is engaged in the business of processing industry (petrochemicals), wholesale trading and management consulting activities. Currently, TPIA and its subsidiaries are engaged in the production of petrochemicals, such as Olefins and Polyolefins (including by-products), Styrene Monomer, Butadiene, and Synthetic Rubber; and tank leasing and jetty management services.
14. United Tractors Tbk (UNTR) was established in Indonesia on October 13, 1972 under the name PT Inter Astra Motor Works and started its operations in 1973. UNTR is the leading and largest heavy equipment distributor company in Indonesia, providing products from world-renowned brands such as Komatsu, UD Trucks, Scania, Bomag, Tadano, and Komatsu Forest. On September 19, 1989 the

company listed their shares on the Jakarta and Surabaya Stock Exchanges as PT United Tractors Tbk (UNTR), with PT Astra International Tbk as the majority shareholder. The scope of business activities of UNTR and its subsidiaries include sales and rental of heavy equipment (construction machinery) along with after-sales service, mining and mining contracting, engineering, planning, assembling, and manufacturing of machinery components, tools, equipment, and heavy equipment, shipbuilding and repair services, ship chartering and shipping transportation, power plant construction industry and fishing industry.

4.2 Research Findings

4.2.1 Dividend Discount Model (DDM) Constant Growth Method

a. Calculating the expected Dividend Growth Rate (g)

In calculating intrinsic value with constant growth DDM it is assumed that dividends experience constant growth. The dividend growth rate is calculated by multiplying ROE by the level of retained earnings of the company (Retention ratio), ROE is calculated by dividing the company's net profit by common shareholders' equity, the calculation can be seen in Appendix 1. Retention ratio is calculated by one minus DPR, DPR calculation can be seen

in Appendix 4, The dividend growth rate (g) is calculated based on historical data from 2018 to 2021 which can be seen in Appendix 6.

b. Determining Estimated Expected Dividends in the Future (D1)

The expected dividend estimate is the estimated dividend in 2022, the estimated dividend is calculated by multiplying the last year's dividend distributed, namely the 2021 dividend by one plus the dividend growth rate (g), the calculation of the expected dividend estimate can be seen in Appendix 7.Determining the Expected Return (k)

c. The level of return required by investors is calculated by dividing the last year's dividend distributed (dividend in 2021) by the current market price (market price when data collection) and then summing it up with the dividend growth rate (g), the calculation of which can be seen in Appendix 8.

d. Calculating the Intrinsic Value of Constant Growth DDM

Table 4. 1

Intrinsic Value of Shares with Constant Growth DDM

No	Code of Company	G	D_1	K	Intrinsic Value	Current Market Price
1	ADRO	0,0584	169	0,1091	3.340	3.850
2	ANTM	0,0306	40	0,0406	3.995	1.985
3	CPIN	0,1263	122	0,1445	6.664	5.650
4	ICBP	0,1140	239	0,1352	11.276	10.000
5	INDF	0,0802	300	0,1179	7.968	6.725
6	ITMG	0,0376	4418	0,1312	47.199	39.025
7	JPFA	0,0840	65	0,1174	1.948	1.295

8	KLBF	0,2154	42	0,2354	2.229	2.090
9	MIKA	0,0948	39	0,1077	3.050	3.190
10	PTBA	0,0354	713	0,1667	5.249	3.690
11	SMGR	0,0480	181	0,0650	10.685	6.575
12	TLKM	0,0379	156	0,8363	3.402	3750
13	TPIA	0,0268	61	0,0333	9.240	2.570
14	UNTR	0,0894	1351	0,1330	31.046	26.075

Source: Data Processed (2022)

Based on calculations using the Dividend Discount Model (DDM) constant growth Method, First is PT Adaro Energy Indonesia Tbk (ADRO) had an estimated intrinsic value of Rp 3.340, PT Aneka Tambang Tbk (ANTM) had an estimated intrinsic value of Rp 3.995, PT Charoen Pokphand Indonesia Tbk (CPIN) had an estimated intrinsic value of Rp 6.664. Then for PT Indofood CBP Sukses Makmur (ICBP) had an estimated intrinsic value of the company's shares of Rp 11.276, PT Indofood Sukses Makmur Tbk (INDF) had an estimated intrinsic value of the company's shares of Rp 7.968, PT Indo Tambangraya Megah Tbk (ITMG) had an estimated intrinsic value of the company's shares of Rp 47.199. Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) had an estimated intrinsic value of the company's shares of Rp 1.948, PT Kalbe Farma Tbk (KLBF) had an estimated intrinsic value of Rp 2.229, PT Mitra Keluarga Karyasehat Tbk (MIKA) had an estimated intrinsic value of Rp 3.050. Subsequently PT Bukit Asam Tbk (PTBA) had an estimated intrinsic value of Rp 5.249, PT Semen Indonesia Tbk (SMGR) had an estimated intrinsic value of Rp 10.685, PT Telkom Indonesia Tbk (TLKM) had an estimated intrinsic value of Rp 3.402. As well as PT Chandra Asri

Petrochemical Tbk (TPIA) had an estimated intrinsic value of Rp 9.240. PT United Tractors Tbk (UNTR) had an estimated intrinsic value of Rp 31.046.

4.2.2 Dividend Discount Model (DDM) Non-constant growth Method

In determining intrinsic value with non-constant growth DDM, it is determined by dividing the dividend flow into two parts, the first part is covering the non-constant dividend flow, and the second part is assuming that dividends experience constant growth.

a. Calculating the supernormal Dividend Growth Rate (g1)

   In determining the intrinsic value with DDM, the growth is not constant at the beginning which includes an inconstant dividend flow, in this study it is assumed to occur for 2 years, and then it is assumed that dividends experienced constant growth. The dividend growth rate is calculated by multiplying ROE by the level of retained earnings of the company (Retention ratio), ROE is calculated by dividing the company's net income by common shareholders' equity. The retention ratio is calculated by one minus the DPR, the dividend growth rate (g) is calculated based on historical data for 2018 and 2019 which can be seen in Appendix 9.

d. Calculating the constant Dividend Growth Rate (g)

   In calculating intrinsic value with non-constant growth DDM, it is assumed that after experiencing non-constant growth, then dividends experience

constant growth. The dividend growth rate is calculated by multiplying ROE by the level of retained earnings of the company (Retention ratio), ROE is calculated by dividing the company's net profit by common shareholders' equity, the calculation can be seen in Appendix 1. The retention ratio is calculated by one minus DPR, the DPR calculation can be seen in Appendix 4, The dividend growth rate (g) is calculated based on historical data from 2018 to 2021 which can be seen in Appendix 6.

e. Determining Estimated Expected Dividends in the Future (Dn)

   Estimated dividends at the end of the year of supernormal dividend growth, namely the estimate in the second year of supernormal dividend growth, the calculation of which can be seen in Appendix 10.

f. Determining the Expected Return (k)

   The level of return required by investors is calculated by dividing the last year's dividends distributed (dividends in 2021) by the current market price (market price when data collection) and then summing it up with the dividend growth rate (g), the calculation of which can be seen in Appendix 8.

g. Intrinsic Value of Shares with Non-constant Growth DDM

Table 4. 2

Intrinsic Value of Shares with Constant Growth DDM Non-Constant

No	Company Code	g_1	D_n	g_c	k	Intrinsic Value	Current Market Price
1	ADRO	0,060	179,93	0,036	0,077	4.150	3.850
2	ANTM	0,022	40,48	0,031	0,050	2.011	1.985
3	CPIN	0,200	155,67	0,126	0,145	7.177	5.650
4	ICBP	0,103	261,67	0,114	0,135	10.886	10.000
5	INDF	0,064	314,59	0,080	0,121	7.008	6.725
6	ITMG	0,014	4380,20	0,022	0,131	38.751	39.025
7	JPFA	0,109	73,80	0,082	0,129	1.454	1.295
8	KLBF	0,234	53,30	0,217	0,234	2.602	2.090
9	MIKA	0,093	43,01	0,095	0,106	3.473	3.190
10	PTBA	0,045	752,12	0,059	0,245	3.653	3.690
11	SMGR	0,063	190,02	0,049	0,075	7.052	6.575
12	TLKM	0,025	157,53	0,042	0,082	3.505	3750
13	TPIA	0,025	62,14	0,018	0,041	2.650	2.570
14	UNTR	0,114	1538,83	0,089	0,137	29.345	26.075

Data Processed (2022)

Based on calculations using the Dividend Discount Model (DDM) Non-constant growth method, first is PT Adaro Energy Indonesia Tbk (ADRO) had an estimated intrinsic value of Rp 4.150, PT Aneka Tambang Tbk (ANTM) had an estimated intrinsic value of Rp 2.011, PT Charoen Pokphand Indonesia Tbk (CPIN) had an estimated intrinsic value of Rp 7.177. Furthermore for PT Indofood CBP Sukses Makmur (ICBP) had an estimated intrinsic value of the company's shares of Rp 10.886. PT Indofood Sukses Makmur Tbk (INDF) had an estimated intrinsic value of the company's shares of Rp 7.008. PT Indo Tambangraya Megah Tbk (ITMG) had an estimated intrinsic value of the company's shares of Rp 38.751.

Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) had an estimated intrinsic value of the company's shares of Rp 1.454. PT Kalbe Farma Tbk (KLBF) had an estimated intrinsic value of Rp 2.602. PT Mitra Keluarga Karyasehat Tbk (MIKA) had an estimated intrinsic value of Rp 3.473. Subsequently PT Bukit Asam Tbk (PTBA) had an estimated intrinsic value of Rp 3.653. PT Semen Indonesia Tbk (SMGR) had an estimated intrinsic value of Rp 7.052. PT Telkom Indonesia Tbk (TLKM) had an estimated intrinsic value of Rp 3.505. As well as PT Chandra Asri Petrochemical Tbk (TPIA) had an estimated intrinsic value of Rp 2.650. PT United Tractors Tbk (UNTR) has an estimated intrinsic value of Rp 29.345.

4.2.3 Price Earning Ration (PER) Method

a. Calculating the expected Dividend Growth Rate (g)

In the calculation of intrinsic value with PER it is assumed that dividends experienced constant growth. The dividend growth rate is calculated by multiplying ROE by the level of retained earnings of the company (Retention ratio), ROE is calculated by dividing the company's net profit by common shareholders' equity, the calculation can be seen in Appendix 1. The retention ratio is calculated by one minus DPR, the calculation of DPR can be seen in Appendix 4, The dividend growth rate (g) is calculated based on historical data from 2018 to 2021 which can be seen in Appendix 6.

b. Determining Estimated Cash Earning Per Share (EPS1)

The expected EPS estimate is the estimated EPS in 2022, the EPS estimate is calculated by multiplying the EPS of the last year distributed, namely the 2021 dividend by one plus the dividend growth rate (g), the calculation can be seen in Appendix 12.

c. Determining the Expected Return (k)

The level of return required by investors is calculated by dividing the last year's dividend distributed in 2021 by the current market price (market price at the time of data collection) and then summing it up with the dividend growth rate (g), the calculation of which can be seen in Appendix 13.

d. Calculating Price Earning Ratio (PER)

Price Earning Ratio is calculated by dividing the estimated dividend (D1) by the estimated EPS (EPS1), then the result of the calculation is divided by the required rate of return (k) which is reduced by the expected earning growth (g), the calculation can be seen in Appendix 14.

e. Calculating the Intrinsic Value of Shares with Price Earning Ratio (PER)

Table 4. 3

Intrinsic Value of Stock with Price Earning Ratio (PER)

No	Company Code	EPS	PER	Intrinsic Value	Current Market Price
1	ADRO	123	13,29	3.340	3.850

2	ANTM	13	176,60	3.995	1.985
3	CPIN	126	55,30	6.664	5.650
4	ICBP	217	49,10	11.276	10.000
5	INDF	261	29,02	7.968	6.725
6	ITMG	3892	4,00	47.199	39.025
7	JPFA	126	14,65	1.948	1.295
8	KLBF	32	56,92	2.229	2.090
9	MIKA	20	131,67	3.050	3.190
10	PTBA	342	8,27	5.249	3.690
11	SMGR	213	59,83	10.685	6.575
12	TLKM	177	20,20	3.402	3750
13	TPIA	45	50,85	9.240	2.570
14	UNTR	22	22,30	31.046	26.075

Source: Data Processed (2022)

Based on calculations using the Price Earning Ratio (PER) method, first is PT Adaro Energy Indonesia Tbk (ADRO) had an estimated intrinsic value of Rp 3.340, PT Aneka Tambang Tbk (ANTM) had an estimated intrinsic value of Rp 3.995, PT Charoen Pokphand Indonesia Tbk (CPIN) had an estimated intrinsic value of Rp 6.664. Beside that, PT Indofood CBP Sukses Makmur (ICBP) had an estimated intrinsic value of the company's shares of Rp 11.276, PT Indofood Sukses Makmur Tbk (INDF) had an estimated intrinsic value of the company's shares of Rp 7.968, PT Indo Tambangraya Megah Tbk (ITMG) had an estimated intrinsic value of the company's shares of Rp 47.199. Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) had an estimated intrinsic value of the company's shares of Rp 1.948, PT Kalbe Farma Tbk (KLBF) had an estimated intrinsic value of Rp 2.229, PT Mitra Keluarga Karyasehat Tbk (MIKA) had an estimated intrinsic value of Rp 3.050. Subsequently PT Bukit

Asam Tbk (PTBA) had an estimated intrinsic value of Rp 5.249. PT Semen Indonesia Tbk (SMGR) had an estimated intrinsic value of Rp 10.685. PT Telkom Indonesia Tbk (TLKM) had an estimated intrinsic value of Rp 3.402. As well as PT Chandra Asri Petrochemical Tbk (TPIA) had an estimated intrinsic value of Rp 9.240. PT United Tractors Tbk (UNTR) had an estimated intrinsic value of Rp 31.046.

4.3 Discussion

4.3.1 Stock Price Valuation with Dividend Discount Model (DDM) method Constant Growth

After calculating the intrinsic value of shares using the Dividend Discount Model Constant Growth approach, the results are shown in the following table:

Table 4. 4

Comparison of Intrinsic Value of Shares with Market Price Per Share with Constant Growth DDM

No	Code of Company	Intrinsic Value	Current Market Price	Ratio (%)	Description
1	ADRO	3.340	3.850	115,27	Overvalued
2	ANTM	3.995	1.985	49,69	Undervalued
3	CPIN	6.664	5.650	84,78	Undervalued
4	ICBP	11.276	10.000	88,68	Undervalued
5	INDF	7.968	6.725	84,40	Undervalued
6	ITMG	47.199	39.025	82,68	Undervalued

7	JPFA	1.948	1.295	66,48	Undervalued
8	KLBF	2.229	2.090	93,76	Undervalued
9	MIKA	3.050	3.190	104,59	Overvalued
10	PTBA	5.249	3.690	70,30	Undervalued
11	SMGR	10.685	6.575	61,53	Undervalued
12	TLKM	3.402	3750	110,23	Overvalued
13	TPIA	9.240	2.570	27,81	Undervalued
14	UNTR	31.046	26.075	83,99	Undervalued

Source: Data Processed (2022)

Based on the calculation of stock valuation using the Dividend Discount Model constant growth method, it can be seen that the fair price of PT Adaro Energy Indonesia Tbk (ADRO) shares was Rp 4.150, while the ratio of market price to intrinsic value was 93%, PT Aneka Tambang Tbk (ANTM) had amounted to Rp 2.011 and the ratio of market price to intrinsic value was 99%, PT Charoen Pokphand Indonesia Tbk (CPIN) amounted to Rp 7.177 and the ratio of market price to intrinsic value was 79%, PT Indofood CBP Sukses Makmur (ICBP) amounted to Rp 10.886 and the ratio of market price to intrinsic value was 92%. Then for PT Indofood Sukses Makmur Tbk (INDF) at Rp 7,008 and the ratio of market price to intrinsic value was 96%, PT Indo Tambangraya Megah Tbk (ITMG) at Rp 38.751 and the ratio of market price to intrinsic value was 101%. Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) at Rp 1.454 and the ratio of market price to intrinsic value was 89%, PT Kalbe Farma Tbk (KLBF) at Rp 2.602 and the ratio of market price to intrinsic value was 80%, PT Mitra Keluarga Karyasehat Tbk (MIKA) at Rp 3.473 and the ratio of market price to

intrinsic value was 92%. Subsequently PT Bukit Asam Tbk (PTBA) at Rp 3.653 and the ratio of market price to intrinsic value was 101%, PT Semen Indonesia Tbk (SMGR) at Rp7.052 and the ratio of market price to intrinsic value was 93%, PT Telkom Indonesia Tbk (TLKM) at Rp 3.505 and the ratio of market price to intrinsic value was 107%. As well as PT Chandra Asri Petrochemical Tbk (TPIA) at Rp 2.650 and the ratio of market price to intrinsic value was 97%, PT United Tractors Tbk (UNTR) at Rp 29.345 and the ratio of market price to intrinsic value was 89%.

4.3.2 Stock Price Valuation with Dividend Discount Model (DDM) method Non-Constant Growth

After calculating the intrinsic value of shares using the Dividend Discount Model Non-Constant Growth approach, the results are shown in the following table:

Table 4. 5

Comparison of Intrinsic Value of Shares with Market Price Per Share with Non-Constant Growth DDM

No	Code of Company	Intrinsic Value	Current Market Price	Ratio (%)	Description
1	ADRO	4.150	3.850	93%	Undervalued
2	ANTM	2.011	1.985	99%	Undervalued
3	CPIN	7.177	5.650	79%	Undervalued
4	ICBP	10.886	10.000	92%	Undervalued
5	INDF	7.008	6.725	96%	Undervalued
6	ITMG	38.751	39.025	101%	Overvalued
7	JPFA	1.454	1.295	89%	Undervalued

8	KLBF	2.602	2.090	80%	Undervalued
9	MIKA	3.473	3.190	92%	Undervalued
10	PTBA	3.653	3.690	101%	Overvalued
11	SMGR	7.052	6.575	93%	Undervalued
12	TLKM	3.505	3750	107%	Overvalued
13	TPIA	2.650	2.570	97%	Undervalued
14	UNTR	29.345	26.075	89%	Undervalued

Source: Data Processed (2022)

Based on the calculation of stock valuation using the Dividend Discount Model Non-constant growth method, it can be seen that the fair price of PT Adaro Energy Indonesia Tbk (ADRO) shares was Rp 4.150 and the ratio of market price to intrinsic value was 93%. PT Aneka Tambang Tbk (ANTM) had amounted to Rp 2.011 and the ratio of market price to intrinsic value was 99% PT Charoen Pokphand Indonesia Tbk (CPIN) amounted to Rp 7.177 and the ratio of market price to intrinsic value was 79%. Then for PT Indofood CBP Sukses Makmur (ICBP) amounted to Rp 10.886 and the ratio of market price to intrinsic value was 92%, PT Indofood Sukses Makmur Tbk (INDF) at Rp 7,008 and the ratio of market price to intrinsic value was 96%, PT Indo Tambangraya Megah Tbk (ITMG) at Rp 38.751 and the ratio of market price to intrinsic value was 101%. Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) at Rp 1.454 and the ratio of market price to intrinsic value was 89%, PT Kalbe Farma Tbk (KLBF) at Rp 2.602, the ratio of market price to intrinsic value was 80%, PT Mitra Keluarga Karyasehat Tbk (MIKA) at Rp 3.473 and the ratio of market price to intrinsic value was 92%. Subsequently PT Bukit

Asam Tbk (PTBA) at Rp 3.653 and the ratio of market price to intrinsic value was 101%. PT Semen Indonesia Tbk (SMGR) at Rp7.052 and the ratio of market price to intrinsic value was 93%, PT Telkom Indonesia Tbk (TLKM) at Rp 3.505, the ratio of market price to intrinsic value was 107%. As well as PT Chandra Asri Petrochemical Tbk (TPIA) at Rp 2.650 and the ratio of market price to intrinsic value was 97%, PT United Tractors Tbk (UNTR) at Rp 29.345 and the ratio of market price to intrinsic value was 89%.

4.3.3 Stock Price Valuation with Price Earning Ratio (PER)

After calculating the intrinsic value of shares using the Price Earning Ratio approach, the results are shown in the following table:

Table 4. 6

Comparison of Intrinsic Value of Shares with Market Price Per Share with Price Earning Ratio

No	Code of Company	Intrinsic Value	Current Market Price	Ratio (%)	Description
1	ADRO	3.340	3.850	115,27	Overvalued
2	ANTM	3.995	1.985	49,69	Undervalued
3	CPIN	6.664	5.650	84,78	Undervalued
4	ICBP	11.276	10.000	88,68	Undervalued
5	INDF	7.968	6.725	84,40	Undervalued
6	ITMG	47.199	39.025	82,68	Undervalued
7	JPFA	1.948	1.295	66,48	Undervalued
8	KLBF	2.229	2.090	93,76	Undervalued
9	MIKA	3.050	3.190	104,59	Overvalued
10	PTBA	5.249	3.690	70,30	Undervalued
11	SMGR	10.685	6.575	61,53	Undervalued

12	TLKM	3.402	3.750	110,23	Overvalued
13	TPIA	9.240	2.570	27,81	Undervalued
14	UNTR	31.046	26.075	83,99	Undervalued

Source: Data Processed (2022)

Based on the calculation of stock valuation using the Price Earning Ratio method, it can be seen that the fair price of PT Adaro Energy Indonesia Tbk (ADRO) shares was Rp 3,340 and the ratio of market price to intrinsic value was 115.27%, PT Aneka Tambang Tbk (ANTM) had amounted to Rp 3,995 and the ratio of market price to intrinsic value was 49.69 PT Charoen Pokphand Indonesia Tbk (CPIN) amounted to Rp 6,664 and the ratio of market price to intrinsic value was 84.78%. Then for PT Indofood CBP Sukses Makmur (ICBP) amounted to Rp 11.276 and the ratio of market price to intrinsic value was 88.68%, PT Indofood Sukses Makmur Tbk (INDF) at Rp 7,968 and the ratio of market price to intrinsic value was 84.40%, PT Indo Tambangraya Megah Tbk (ITMG) at Rp 47.199 and the ratio of market price to intrinsic value was 82.68%. Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) at Rp 1,948 and the ratio of market price to intrinsic value was 66.48%, PT Kalbe Farma Tbk (KLBF) at Rp 2. 229 and the ratio of market price to intrinsic value was 93.76%, PT Mitra Keluarga Karyasehat Tbk (MIKA) at Rp 3,050 and the ratio of market price to intrinsic value was 104.59%, PT Bukit Asam Tbk (PTBA) at Rp 5,249 and the ratio of market price to intrinsic value was 97.37%. PT Semen Indonesia Tbk (SMGR) at Rp 10,685 and the ratio of market price to

intrinsic value was 61.53%, PT Telkom Indonesia Tbk (TLKM) at Rp 3,402 and the ratio of market price to intrinsic value was 110.23%. As well as PT Chandra Asri Petrochemical Tbk (TPIA) at Rp 9,240 and the ratio of market price to intrinsic value is 27.81%, PT United Tractors Tbk (UNTR) at Rp 31,046 and the ratio of market price to intrinsic value was 83.99%.Based on the calculation of stock valuation using the Price Earning Ratio method, it can be seen that the fair price of PT Adaro Energy Indonesia Tbk (ADRO) shares was Rp 3,340 and the ratio of market price to intrinsic value was 115.27%, PT Aneka Tambang Tbk (ANTM) had amounted to Rp 3,995 and the ratio of market price to intrinsic value was 49.69 PT Charoen Pokphand Indonesia Tbk (CPIN) amounted to Rp 6,664 and the ratio of market price to intrinsic value was 84.78%. Then for PT Indofood CBP Sukses Makmur (ICBP) amounted to Rp 11.276 and the ratio of market price to intrinsic value was 88.68%, PT Indofood Sukses Makmur Tbk (INDF) at Rp 7,968 and the ratio of market price to intrinsic value was 84.40%, PT Indo Tambangraya Megah Tbk (ITMG) at Rp 47.199 and the ratio of market price to intrinsic value was 82.68%. Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) at Rp 1,948 and the ratio of market price to intrinsic value was 66.48%, PT Kalbe Farma Tbk (KLBF) at Rp 2. 229 and the ratio of market price to intrinsic value was 93.76%, PT Mitra Keluarga Karyasehat Tbk (MIKA) at Rp 3,050 and the ratio of market price to intrinsic value was 104.59%, PT Bukit Asam Tbk (PTBA) at Rp 5,249 and the

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Based on the calculation of stock valuation using the Price Earning Ratio method, it can be seen that the fair price of PT Adaro Energy Indonesia Tbk (ADRO) shares was Rp 3,340 and the ratio of market price to intrinsic value was 115.27%, PT Aneka Tambang Tbk (ANTM) had amounted to Rp 3,995 and the ratio of market price to intrinsic value was 49.69 PT Charoen Pokphand Indonesia Tbk (CPIN) amounted to Rp 6,664 and the ratio of market price to intrinsic value was 84.78%. Then for PT Indofood CBP Sukses Makmur (ICBP) amounted to Rp 11.276 and the ratio of market price to intrinsic value was 88.68%, PT Indofood Sukses Makmur Tbk (INDF) at Rp 7,968 and the ratio of market price to intrinsic value was 84.40%, PT Indo Tambangraya Megah Tbk (ITMG) at Rp 47.199 and the ratio of market price to intrinsic value was 82.68%. Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) at Rp 1,948 and the ratio of market price to intrinsic value was 66.48%, PT Kalbe Farma

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Based on the calculation of stock valuation using the Price Earning Ratio method, it can be seen that the fair price of PT Adaro Energy Indonesia Tbk (ADRO) shares was Rp 3,340 and the ratio of market price to intrinsic value was 115.27%, PT Aneka Tambang Tbk (ANTM) had amounted to Rp 3,995 and the ratio of market price to intrinsic value was 49.69 PT Charoen Pokphand Indonesia Tbk (CPIN) amounted to Rp 6,664 and the ratio of market price to intrinsic value was 84.78%. Then for PT Indofood CBP Sukses Makmur (ICBP) amounted to Rp 11.276 and the ratio of market price to intrinsic value was 88.68%, PT Indofood Sukses Makmur Tbk (INDF) at Rp 7,968 and the ratio of market price to intrinsic value was 84.40%, PT Indo Tambangraya

Megah Tbk (ITMG) at Rp 47.199 and the ratio of market price to intrinsic value was 82.68%. Meanwhile PT Japfa Comfeed Indonesia Tbk (JPFA) at Rp 1,948 and the ratio of market price to intrinsic value was 66.48%, PT Kalbe Farma Tbk (KLBF) at Rp 2. 229 and the ratio of market price to intrinsic value was 93.76%, PT Mitra Keluarga Karyasehat Tbk (MIKA) at Rp 3,050 and the ratio of market price to intrinsic value was 104.59%, PT Bukit Asam Tbk (PTBA) at Rp 5,249 and the ratio of market price to intrinsic value was 97.37%. PT Semen Indonesia Tbk (SMGR) at Rp 10,685 and the ratio of market price to intrinsic value was 61.53%, PT Telkom Indonesia Tbk (TLKM) at Rp 3,402 and the ratio of market price to intrinsic value was 110.23%. As well as PT Chandra Asri Petrochemical Tbk (TPIA) at Rp 9,240 and the ratio of market price to intrinsic value is 27.81%, PT United Tractors Tbk (UNTR) at Rp 31,046 and the ratio of market price to intrinsic value was 83.99%.

4.3.4 Implications of Covid-19 to Jakarta Islamic index is company

After the beginning of 2020, the Covid-19 pandemic has made financial markets experience a lot of pressure and uncertainty. Financial markets experienced a lot of pressure and uncertainty, so investors must be more careful in investing their funds so as not to experience large losses. When the government announced the first case of Covid-19, the stock market immediately experienced a continuous correction for

some time. This indicated that the Covid-19 pandemic had a huge impact on the condition of the Indonesian capital market. On the other hand, the downward trend in the Composite Stock Price Index (JCI) provided an opportunity for investors to invest in companies whose shares are priced cheaply. companies whose shares are priced low in the market. Buying stocks at low prices can provide high returns if Indonesia's economic conditions have improved after the Covid-19 pandemic subsided.

Referring to IDX data, the sharpest declines were recorded in the Mining sector, which fell 18.42%, and the Trade, Services and Investment sector by 20.88%. This was due to the increasingly high level of spread of the Covid-19 virus which required the Indonesian Government to impose Large-Scale Social Restrictions (PSBB) which greatly impacted the Indonesian economy. In addition, there are also pharmaceutical sub-sectors, such as PT Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO), PT Kimia Farma Tbk (KAEF), Kalbe Farma Tbk PT (KLBF) which experienced an increase in sales during the pandemic. According to KLBF's financial report quoted from the Indonesia Stock Exchange, it can be seen that throughout 2020 sales from the herbal medicine and supplement segment supported the company is revenue by 68.45%, followed by the food and beverage segment by 27.06% and the pharmaceutical segment which contributed 4.49% of total turnover (Böni & Zimmermann, 2021).

Currently the Jakarta Islamic Index 30 consists of 30 companies from several sub-sectors such as chemical, cement, food & beverages, infrastructure, investment trading, metals & other minerals, mining, pharmaceuticals, telecommunications, utilities & transportation and chemical sectors. Based on research there are 4 stock that experience overvalued condition which is that 6 stock is come from 4 sub sector of BEI. First is Mining sector ADRO, PTBA and ITMG, based on the research this company is the most sub sector that has experienced overvalued condition. The company experienced a significant decline due to the covid-19 pandemic, based on the lowest price ADRO experienced a decline until it touched a price of Rp. 610, PTBA Rp. 1800 and ITMG Rp. 6800. However, after the pandemic subsided, the company slowly increased. The factors that affecting the increase in coal prices are supported by the increase in demand for another countries, the increase in coal commodity prices based on figure 4.1 which increased by 78.89% from Rp. 48,186 to Rp.86,200. At the close of the stock market in 2021, ADRO touched a price of Rp. 2,250, PTBA Rp. 2710 and ITMG Rp.20,400. The increases of coal price it has a positive impact on mining coal sector because the income of mining coal company is increase. For example data from IDX, ADRO is income increase 138% from Rp. 5.613.390.720.000 to Rp. 13.334.933.220.000. Then for PTBA is income increase for 96% from Rp. 4.040.394.000.000 to Rp. 7.909.113.000.000. Also ITMG is income increase for 277% from Rp. 1.799.150.826.000 to Rp. 6.785.908.330.000.

Based on calculations, these 3 stocks are overvalued where prices are higher than intrinsic value.

Figure 4. 1 Coal Price

In addition, there were also from the pharmaceutical and healthcare sectors, namely KLBF and MIKA. Based on the lowest price KLBF had touched at Rp.980 while MIKA's price was Rp. 1685. These 2 stocks also started to slowly increase after the covid-19 pandemic. Also because of there're many demand for APD, Medicine, vaccine, hospital it makes pharmaceutical and healthcare because of covid 19 pandemic that stock increased the income and stock price significanly. The income

of KLBF increased 27% from Rp. 2.506.764.572.075 to Rp. 3.183.621.310.043. Also MIKA's income Increased 68% from Rp. 730.145.081.007 to Rp. 1.228.824.616.846. In the telecommunication sector TLKM also affected by covid-19 TLKM had touched lowest price at Rp. 2.560 then closed on 2021 at Rp. 4040. The profit of TLKM increased 33% from Rp. 18.663.000.000.000 to 24.760.000.000.000. Erick Thohir the minister of BUMN said that Telkom managed to achieve high profitability from its net profit because there was a cut in Capital Expenditure (CapEx) (Yanwardhana, 2021). However, based on intrinsic value calculations, because this stock price is higher than the intrinsic value means that stock in overvalued condition. The stock was overvalued because of the high volatility of share price. The movement up or down of stock prices on the stock exchange is the volatility of stock prices. To measure the risk of a stock can be seen from the volatility of the stock price (Hashemijoo et al., 2012, pp. 111–129). Greater volatility The price of stocks that have high volatility can change at any time and the changes are difficult to predict. Market volitality is influenced by several factors. Dividend Yield affected an investor's investment decision and the change in investment decision can have an impact on volatility stock price. Firm size affects stock price volatility This is because the larger the size of the company, the greater the diversification of activities, so that large companies usually have more public information and can reduce the level of stock price volatility(Hashemijoo et al., 2012). Companies that have unstable income levels are a signal to investors that the

company has a high risk to invest in. This signal can influence investors to sell the company's shares in a short period of time, so companies with high levels of earnings volatility tend to have volatile stocks. book value per share has an effect on stock price volatility, this is because book value per share is accounting information and all forms of information in the capital market are closely related to the reactions of stock investors so that they can affect stock price volatility (Mgbame & Ikhatua, 2013).

CHAPTER V

5.1 Conclusions

Based on the results of data analysis and discussion of the research results that have been conducted, it can be concluded that based on the calculation of stock valuation using the Dividend Discount Model (DDM) Constant Growth method, it can be seen that the stock of the companies ANTM, CPIN, INDF, ITMG, JPFA, KLBF, PTBA, SMGR, TPIA and UNTR were in an undervalue condition or cheap, meaning that the intrinsic value was greater than the stock market value, while the stock of the companies ADRO, MIKA and TLKM were in an overvalued condition or expensive, meaning that the stock market value was greater than the intrinsic value. Therefore, the right investment decision recommendation was not to buy the company's shares, and for investors who already owned the company's shares to sell them.

Based on the calculation of stock valuation using the Dividend Discount Model (DDM) Non-Constant Growth method, it can be seen that the stock of the companies ADRO, ANTM, CPIN, INDF, JPFA, KLBF, MIKA, SMGR, TPIA and UNTR were in an undervalue condition or cheap, meaning that the intrinsic value was greater than the stock market value, while the stock of the companies ITMG, PTBA and TLKM were in an overvalued condition or expensive, meaning that the stock market value was greater than the intrinsic value. Therefore, the right

investment decision recommendation was not to buy the company's shares, and for investors who already owned the company's shares to sell them.

Based on the calculation of stock valuation using the Price Earning Ratio (PER) method, it can be seen that the stock of the companies ANTM, CPIN, INDF, ITMG, JPFA, KLBF, PTBA, SMGR, TPIA and UNTR were in an undervalue condition or cheap, while the stock of the companies ADRO, MIKA and TLKM were in an overvalued condition or expensive, meaning that the stock market value was greater than the intrinsic value. Therefore, the right investment decision recommendation was not to buy the company's shares, and for investors who already owned the company's shares to sell them.

The mining sector of ADRO, PTBA and ITMG, based on research, these 3 companies were the sub-sectors that experience the most overvalued conditions which were influenced by the high volatility of coal prices so it increase the income of the coal sector. Because of that it is interesting for investor to invest in the coal sectors. Then in pharmaceutical and healthcare sectors it is overvalued because when covid-19 the demand for APD, Medicine, vaccine, hospital is high so it's can makes the investor to buy that shares. Also in Telecomunications sector, TLKM profit is increased significantly because of cut in Capital Expenditure (CapEx) which is can influenced the investor to buy TLKM shares. Therefore these things can make investors interested in buying these shares.

5.2 Recommendations

Based on the results of data analysis and discussion that has been carried out, the researcher suggestions for the investor, based on the calculation of Intrinsic Value with Dividend Discount Model (DDM) Constant Growth Method and Price Earning Ratio, the author recommends to buy stock which is in undervalue condition such as ANTM, CPIN, INDF, ITMG, JPFA, KLBF, PTBA, SMGR, TPIA and UNTR, also the author recommends to sell or avoid to buy stock that in overvalued condition such as ADRO, MIKA, TLKM. Then based on the calculation of Intrinsic Value with Dividend discount model Non-Constan growth Method, the researcher recommends to buy stock which is in undervalue condition such as ADRO, ANTM, CPIN, INDF, JPFA, KLBF, MIKA, SMGR, TPIA and UNTR, also the author recommends to sell or avoid to buy stock that in overvalued condition such as ITMG, PTBA and TLKM. The results of this study are more recommended for long-term investors rather than traders, as the intrinsic value calculated based on the annual report is not suitable for daily traders who make daily transactions. Reports do not suit traders who make daily transactions. In addition, for potential investors in conducting stock valuations using fundamental analysis, it would be better if investors consider the company's external conditions such as macroeconomic conditions, political conditions, social conditions, and the company's prospects in the coming year.

For future researchers recommended to use a stock valuation approach that is oriented towards financial ratios other than dividends such as Price to Book Value (PBV), Discouted Cash Flow (DCF) and Free Cash Flow to Firm (FCFF) to add a variety of stock price valuation methods in order to increase reader reference and can help investors in considering investment decisions. In addition, future researchers can add or use other indexes and sector companies.

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APPENDIX

Appendix 1: Return on Equity (ROE)

No	Company Code	ROE (%)			
		2018	2019	2020	2021
1	ADRO	11,44	10,84	3,96	22,57
2	ANTM	8,87	1,07	6,04	8,93
3	CPIN	33,49	23,42	16,47	14,41
4	ICBP	21,17	19,92	22,38	18,86
5	INDF	12,39	12,99	15,23	15,83
6	ITMG	27,01	14,63	4,66	39,58
7	JPFA	20,14	16,40	7,71	15,44
8	KLBF	42,46	40,91	41,78	46,60
9	MIKA	15,07	17	17,11	23,31
10	PTBA	31,98	22,13	14,09	32,61
11	SMGR	9,87	7,41	8,17	5,59
12	TLKM	18,23	18,75	20,29	20,35
13	TPIA	10,30	1,30	2,85	5,20
14	UNTR	19,50	18,51	9,96	14,99

Appendix 2 : Earning Per Share (EPS)

No	Company Code	EPS			
		2018	2019	2020	2021
1	ADRO	189,25	175,49	64,69	416,90
2	ANTM	68,07	8,06	47,82	77,47
3	CPIN	395,67	300,82	234,30	220,81
4	ICBP	392,37	432,07	564,82	547,80
5	INDF	474,47	558,99	735,22	870,36
6	ITMG	3.459,30	1.592,27	507,69	6.188,38
7	JPFA	184,87	150,52	78,17	172,47
8	KLBF	52,41	53,47	58,30	67,91
9	MIKA	42,16	51,25	59,82	87,34
10	PTBA	485,85	361,06	207,78	707,17
11	SMGR	519,11	403,29	470,75	340,75
12	TLKM	182,02	188,39	210	249,94
13	TPIA	146,76	17,74	40,55	99,91

14	UNTR	2.982,63	3.032,61	1.609,37	2.755,85

Appendix 3 : Dividend per Share (DPS)

No	Company Code	DPS			
		2018	2019	2020	2021
1	ADRO	90	110	66	160
2	ANTM	13	3	17	39
3	CPIN	118	81	112	108
4	ICBP	195	215	215	215
5	INDF	236	278	278	278
6	ITMG	3465	1275	474	4258
7	JPFA	100	20	40	60
8	KLBF	26	20	34	35
9	MIKA	1575	2670	2370	2260
10	PTBA	340	326	75	689
11	SMGR	208	40	188	173
12	TLKM	164	154	168	150
13	TPIA	45	5	32	59
14	UNTR	1193	1213	644	1240

Appendix 4 : Dividend Payout Ratio (DPR)

No	Company Code	DPR (%)			
		2018	2019	2020	2021
1	ADRO	47,63	62,46	102,45	38,42
2	ANTM	18,71	34,96	34,98	49,99
3	CPIN	29,82	26,93	47,80	48,91
4	ICBP	49,70	49,76	38,07	39,25
5	INDF	49,74	49,73	37,81	31,94
6	ITMG	100,16	80,07	93,36	68,81
7	JPFA	54,09	13,29	51,17	34,79
8	KLBF	49,60	37,40	58,31	51,53
9	MIKA	42,69	40,97	60,17	41,21
10	PTBA	69,90	90,42	35,95	97,36
11	SMGR	40	10	40	50,66
12	TLKM	90	81,77	80	60
13	TPIA	30,40	29,53	77,92	59,12

14	UNTR	40	40	40,02	45

Appendix 5 : Company Stock Price

No	Company Code	Stock Price				
		2018	2019	2020	2021	31-Dec-2022
1	ADRO	1.215	1.555	1.430	2.250	3.850
2	ANTM	765	840	1.905	2.250	1.985
3	CPIN	7.225	6.500	6.525	5.950	5.650
4	ICBP	10.450	11.150	9.575	8.700	10.000
5	INDF	7.450	7.925	6.850	6.325	6.725
6	ITMG	20.250	11.475	13.850	20.400	39.025
7	JPFA	2.150	1.535	1.465	1.720	1.295
8	KLBF	1.520	1.620	1.480	1.615	2.090
9	MIKA	1.575	2.670	2.370	2.260	3.190
10	PTBA	4.300	2.660	2.810	2.710	3.690
11	SMGR	11.500	12.000	12.425	7.250	6.575
12	TLKM	3.750	3.970	3.310	4.040	3750
13	TPIA	1.344	2.353	2.059	1.831	2.570
14	UNTR	27.350	21.525	26.600	22.150	26.075

Appendix 6 : Dividend Growth (g) Dividend Discount Model (DDM) Approach

No	Company Code	ROE	Retention Ratio	g
1	ADRO	0,120	0,348	0,058
2	ANTM	0,048	0,644	0,031
3	CPIN	0,208	0,608	0,126
4	ICBP	0,205	0,555	0,114
5	INDF	0,140	0,416	0,080
6	ITMG	0,208	0,138	0,037
7	JPFA	0,141	0,597	0,084
8	KLBF	0,429	0,502	0,021
9	MIKA	0,179	0,531	0,095
10	PTBA	0,239	0,149	0,035

11	SMGR	0,076	0,632	0,048
12	TLKM	0,194	0,195	0,037
13	TPIA	0,493	0,027	0,026
14	UNTR	0,152	0,587	0,089

Appendix 7 : Estimation of Expected Dividends (D1) Dividend Discount Model (DDM) Approach

No	Company Code	D0	1+g	D1
1	ADRO	160,16	1,121	169,52
2	ANTM	38,73	1,030	39,91
3	CPIN	108	1,126	121,64
4	ICBP	215	1,114	239,51
5	INDF	278	1,080	300,31
6	ITMG	4258	1,037	4418,2
7	JPFA	60	1,084	65,04
8	KLBF	35	1,021	42,54
9	MIKA	2260	1,095	39,41
10	PTBA	688,51	1,035	712,94
11	SMGR	172,64	1,048	180,93
12	TLKM	149,96	1,037	155,64
13	TPIA	59,07	1,026	60,65
14	UNTR	1240	1,089	1350,91

Appendix 8 : Required rate of return (k) Dividend Discount Model (DDM) Approach

No	Company Code	D0	P0	g	k
1	ADRO	160,16	3.340	0,121	0,109
2	ANTM	38,73	3.995	0,030	0,041
3	CPIN	108	6.664	0,126	0,145
4	ICBP	215	11.276	0,114	0,135
5	INDF	278	7.968	0,080	0,118
6	ITMG	4258	47.199	0,037	0,131
7	JPFA	60	1.948	0,084	0,117

8	KLBF	35	2.229	0,021	0,235
9	MIKA	2260	3.050	0,095	0,108
10	PTBA	688,51	5.429	0,035	0,167
11	SMGR	172,64	10.685	0,048	0,065
12	TLKM	149,96	3.402	0,037	0,084
13	TPIA	59,07	8.040	0,026	0,034
14	UNTR	1240	31.046	0,089	0,133

Appendix 9 : Supernormal Dividend Growth (g1) Dividend Discount Model (DDM) Approach

No	Company Code	ROE	Retention Ratio	g_1
1	ADRO	0,120	0,348	0,068
2	ANTM	0,048	0,644	0,041
3	CPIN	0,208	0,608	0,080
4	ICBP	0,205	0,555	0,126
5	INDF	0,140	0,416	0,101
6	ITMG	0,208	0,138	0,063
7	JPFA	0,141	0,597	0,069
8	KLBF	0,429	0,502	0,200
9	MIKA	0,179	0,531	0,102
10	PTBA	0,239	0,149	0,049
11	SMGR	0,076	0,632	0,038
12	TLKM	0,194	0,195	0,061
13	TPIA	0,493	0,027	0,014
14	UNTR	0,152	0,587	0,071

Appendix 10 : Dividend at the end of the year of supernormal dividend growth (Dn) Dividend Discount Model (DDM) Approach

No	Company Code	D_0	g_1	D_n
1	ADRO	2250	0,020	176
2	ANTM	39	0,019	40
3	CPIN	108	0,077	156
4	ICBP	215	0,063	262

5	INDF	278	0,045	314
6	ITMG	4258	0,005	4380
7	JPFA	60	0,050	74
8	KLBF	35	0,108	53
9	MIKA	36	0,050	43
10	PTBA	688	0,005	752
11	SMGR	173	0,030	195
12	TLKM	150	0,007	157
13	TPIA	59	0,013	62
14	UNTR	1240	0,052	1539

Appendix 11 : Dividend Growth (g) Price Earning Ratio (PER) Approach

No	Company Code	ROE	Retention Ratio	g
1	ADRO	0,120	0,348	0,058
2	ANTM	0,048	0,644	0,031
3	CPIN	0,208	0,608	0,126
4	ICBP	0,205	0,555	0,114
5	INDF	0,140	0,416	0,080
6	ITMG	0,208	0,138	0,037
7	JPFA	0,141	0,597	0,084
8	KLBF	0,429	0,502	0,021
9	MIKA	0,179	0,531	0,095
10	PTBA	0,239	0,149	0,035
11	SMGR	0,076	0,632	0,048
12	TLKM	0,194	0,195	0,037
13	TPIA	0,493	0,027	0,026
14	UNTR	0,152	0,587	0,089

Appendix 12 : EPS Estimation Price Earning Ratio (PER) Approach

No	Company Code	**EPS_0**	**1+g**	**EPS_1**
1	ADRO	417	1,121	441
2	ANTM	77	1,030	80
3	CPIN	221	1,126	249
4	ICBP	548	1,114	610

5	INDF	870	1,080	940
6	ITMG	6.188	1,037	6.241
7	JPFA	172	1,084	187
8	KLBF	68	1,021	82
9	MIKA	87	1,095	96
10	PTBA	707	1,035	732
11	SMGR	341	1,048	357
12	TLKM	250	1,037	259
13	TPIA	100	1,026	102
14	UNTR	2.755	1,089	3.002

Appendix 13 : Required rate of return (k) Price Earning Ratio (PER) approach

No	Company Code	D0	P0	g	k
1	ADRO	160,16	3.340	0,121	0,109
2	ANTM	38,73	3.995	0,030	0,041
3	CPIN	108	6.664	0,126	0,145
4	ICBP	215	11.276	0,114	0,135
5	INDF	278	7.968	0,080	0,118
6	ITMG	4258	47.199	0,037	0,131
7	JPFA	60	1.948	0,084	0,117
8	KLBF	35	2.229	0,021	0,235
9	MIKA	2260	3.050	0,095	0,108
10	PTBA	688,51	5.429	0,035	0,167
11	SMGR	172,64	10.685	0,048	0,065
12	TLKM	149,96	3.402	0,037	0,084
13	TPIA	59,07	8.040	0,026	0,034
14	UNTR	1240	31.046	0,089	0,133

Appendix 14 : Price Earning Ratio (PER)

No	Company Code	**D1**	**EPS1**	**k**	**g**	**PER**
1	ADRO	170	441	0,109	0,121	13,29
2	ANTM	40	80	0,041	0,030	176,60
3	CPIN	122	249	0,145	0,126	55,30
4	ICBP	240	610	0,135	0,114	49,10
5	INDF	300	940	0,118	0,080	29,02
6	ITMG	4418	6.241	0,131	0,037	4,00
7	JPFA	65	187	0,117	0,084	14,65
8	KLBF	42	82	0,235	0,021	56,92
9	MIKA	39	96	0,108	0,095	131,67
10	PTBA	713	732	0,167	0,035	8,27
11	SMGR	181	357	0,065	0,048	59,83
12	TLKM	156	259	0,084	0,037	20,20
13	TPIA	61	102	0,034	0,026	50,85
14	UNTR	1351	3.002	0,133	0,089	22,30