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Bachelor Thesis for International Bachelor of Economics and Business Economics

Relationship Between Dividend Policy and Stock Price Volatility in Emerging Market: Evidence from Indonesia

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6. And finally, Amar Soebhag, as my thesis supervisor who has been guiding me throughout the process even though it has been stalled for a long time. I deeply appreciated what you have done for me.

Abstract

The focus of this thesis is to investigate the relationship between the stock price volatility and the dividend policy of the companies listed in Indonesian Stock Exchange (IDX) in the 21st century (2000-2021). Furthermore, the driver of the changes of stock prices are also analyzed. The main findings suggest that dividend yield is the main driver of stock price volatility. Multiple linear regression analyses are used to explore the relationship between the change of share price and dividend policy. An addition of control variables was also done to take into account any additional factors that might affect the changes in stock price. A significant negative relationship is found between dividend yield and stock price volatility, while a negative relationship is evident between dividend payout ratio and stock price changes. In addition, it is shows that a firm's growth rate, debt level, size and earnings volatility explain stock price changes with size and growth rate having the highest correlation with the volatility of stock price in a negative direction. The paper supports the fact that dividend policy is relevant in determining the volatility of stock prices for companies listed in Indonesian Stock Exchange (IDX). To the best of the authors' knowledge, this paper is the first to show that corporate dividend policy is a key driver of changes in stock price for companies in Indonesia.

Keywords: Indonesia, Stock Price Volatility, Dividend, Dividend Policy

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Chapter 1
Introduction

Dividend policy has been an interesting topic in the world of corporate finance for tens of years. Ever since the seminal paper of Miller and Modigliani (1961), many scientific studies have been brought by researchers and academicians to support or extend the discussion of dividend policy. It can be seen from papers of Black (1976) and DeAngelo et al. (1996). One of the types of research stemming from the paper is the relationship between dividend policy and stock price volatility. Despite years of theoretical and empirical research, the topic remains to be an open question over the years with studies having different results from each other. New theories in regards of dividend policy and stock price volatility have also surfaced from time to time indicating the still existing interests of the topic. To name a few, there are theories on dividend payment ranging from pecking order theory, agency cost, to signaling theory, theories on asymmetry between manager and shareholders, and empirical findings about dividend payout and outside directorship which was reported to have negative relationship by Al-Malkawi (2007) and Al-Najjar and Hussainey (2009).

Theoretically, dividend policy is the decision of what proportion of earnings should be distributed to the company's shareholders (Arnold, 2008). The proportion is usually determined according to investors' distribution towards the company's earnings. It affects the interests of investors leading to differences between selling and buying price of a stock which implies how risk management hold a vital role in investment. Investors are risk averse by nature. This is represented by Baskin (1989), stating that stock price volatility and dividend policy matter to the shareholders, hence investors tend to choose stocks with the least volatility and increasing dividend yield to avoid risks and optimize profits.

In the recent decades, the relationship between dividend policy and stock price volatility has been investigated extensively (see, e.g., Baskin, 1989; Allen and Rachim, 1996; Hussainey et al., 2011; Sörensen and Deboi, 2020). Many researchers are interested to investigate further the potential of it. The main reason of the phenomenon is that the decision on the amount of earnings to payout as dividends is one of the major financial decisions that a firm's managers face. Therefore, a proper understanding of dividend policy is crucial for many other areas of financial economics (Allen & Michaely, 1995). Moreover, a study of the relationship between

stock price volatility and dividend policy would help investors in making investment decision and help managers to decide dividend policy of their company.

Over the years, Indonesia has progressed its economy into one of the most attractive economies in the world. According to World Bank, in the recent years, Indonesia have moved from being a lower-middle income country to an upper-middle income. The same source also reported that Indonesia Stock Exchange (IDX) also experienced a huge growth in the past decades, being the 12th largest stock market in Asia-Pacific region, and the third in Southeast Asian countries. As a result, many foreign investors starting to get interested to invest their capitals in Indonesia. This makes Indonesia an exciting research target for this study. With most of the research in this topic mostly done in the developed countries such as the United States of America, United Kingdom, and Australia, this research can fill the gap and report the study of this topic from another perspective, which is from emerging and developing market. Furthermore, to the author's best knowledge, this would be the first study to have 22 years data of the 21st century.

This study follows the theoretical framework created by Baskin (1989), which was perfected by more recent research of Allen and Rachim (1996), and Hussainey et al. (2011). This study aims to answer the main research question of '*what is the relationship between dividend policy and stock price volatility for firms in Indonesia and how is it compared to the previous studies in different market settings.*' Based on previous studies, a negative relationship between the two variables is expected. A correlation and multiple least square regression will be implemented to help answer the research question and examine the relationship between dividend policy and stock price volatility for firms Indonesia. A regression between stock price volatility and two proxies of dividend policies is going to be done with dividend yield and dividend payout which are the proxies of dividend policy being the independent variables of this study. However, several differences can be noted between this study and the previous three studies mentioned earlier such as:

o Firms from emerging market of Indonesia being the subject of the study
o Financial sectors would be excluded following suggestion of Hussainey et al. (2011), which is different with the study of Baskin (1989), and Allen and Rachim (1996)
o Longer and more recent time frame data is used, which is data in the 21st century where economies have been different and progressed massively.

Chapter 2
Literature Review and Hypotheses

Dividend policy and stock price changes are a source of concern for both investors and executives. The relationship between the has been investigated by many researchers for many years. However, it is still an open question. With the economy evolving fast and massively over the years, it left rooms for improvements from the previous studies of the topic. Ultimately, research in different market settings has been an interesting subject for researchers.

2.1. Dividend Policy and Share Price Volatility

Mentioned in the earlier chapter, dividend policy is an interesting yet important topic in corporate finance. In the recent decades, there are few papers where researcher and economists researched about dividend policy (see, e.g., Gordon, 1959; Miller and Modigliani, 1961).

According Lintner (1956) dividend policy affects changes in stock prices. This evidence attracted researchers to do research to examine the relationship between the two subjects which is backed by the research of researchers that were inspired by the idea of Lintner (see, e.g., Allen and Rachim, 1996; Hussainey, 2011). Different results also existed which are findings from Oyinlola & Ajeigbe (2014) and Gordon (1959) which came out with slightly different but linear findings with Lintner. For example, Oyinlola & Ajeigbe (2014) reported a different combination that affects the volatility of stock prices where dividend payout and retained earnings are instead the significant determinants of stock prices for the case of Nigeria during the period of 2009 and 2013.

Having studied by many researchers, the relationship between stock price volatility and dividend policy have resulted in various findings. To explain the findings, many researchers have attempted to use many dividend theories such as the signaling effect and the rate of return effect.

2.2. Dividend Policy Theory

Being a hot topic in the subject of corporate finance, many theories have surfaced over the years explaining the dividend policy phenomenon starting from Lintner (1956), Modigliani and Miller (1961), or more recently Fama and French (2001). Here are some of the related theories:

2.2.1. Dividend Irrelevance Theory

A seminal paper by Miller and Modigliani in 1961 is arguably one of the very first theories that attracted researchers to do research on the relationship between stock price volatility and dividend policy as also mentioned several times in papers such as Baskin (1989) and Allen and Rachim (1996). According to Miller and Modigliani (1961), dividend policy is irrelevant to the shareholder in a way that when all aspects of investment policy are constant, and any increase in the present dividend is covered by reasonably priced stock sales, shareholder wealth remains unaffected. In short, they argued that dividend policy has no influence on stock prices and the most important assumption to be that companies pays the dividend 100 percent of the time towards the investors. The other assumption is that the absence of transaction costs and taxes holds. Even though this theory has been rejected multiple times from studies such as Baskin (1989), Allen and Rachim (1996) and Hussainey et al. (2011), the theory remains important to the subject of corporate finance and the topic of this study. These are complete assumptions of Miller and Modigliani (1961):

1. The existence of perfect capital markets where taxes or transaction costs do not exist, free and available market information, and a single buyer or seller cannot influence the market price of a product.
2. Investors are rational and securities are valued based on the present value of discounted future cash flows to investors.
3. Managers are the best representatives for shareholders.
4. Firm's investment policy is certain, with full knowledge of future cash flows.

2.2.2. Bird-In-Hand Theory

Bird-In-Hand theory argue that risk-averse investors tend to choose and hold stocks with consistent high dividends. This theory is well-known to be presented by researchers such as Lintner (1962) and Gordon (1963). However, there is no strong empirical support that this theory holds in real life. The theory has two analogy which are *bird-in-hand* and *two-in-bushes*.

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Dividend is represented by *bird in hand* while capital gain is represented by *two in bushes*. According to a book of Gordon (1963), investors tend to choose *bird in hand,* which is dividends than *two in bushes,* which is capital gains because of the uncertainty of future cash flow. The key assumption of this theory is that investors have imperfect info about a company's profitability. Even though cash dividends are normally taxed at a higher rate than capital gains from the sale of a stock, managements still opt to payout dividend to spread positive signal of the firm's prospects.

2.2.3. Agency Cost Theory

Agency cost theory explains how managers are responsible in presenting the interests of shareholders in the financial market. According to Ross et al. (2008), the problem of agency costs stem from the conflict of interest between shareholders and managers from which managers do not consider the best interests of shareholders to make investment decisions and instead act for their own interests. For example, managers decided to develop projects with a negative NPV which is risky and can be very costly for shareholders. Theory of agency cost explains that paying dividends is the solution to reduce the problem. However, there are differences in the argument proposed by researchers. To name a few, Jensen (1986) provide valid evidence backing the argument of this theory. On the contrary, according to Miller and Modigliani (1961), managers are the best agents for the shareholders. Miller and Modigliani (1961) were then proceeded by proposing there is no conflict of interest between them which is the whole idea of this theory.

2.2.4. Signaling Theory

According to Modigliani and Miller (1961), investors and management have perfect knowledge of the firm they are investing and representing. Other arguments can be found from other researchers which explained that compared to the outside investors, management should have more timely and precise information about the firm. Hence, there is an asymmetric information between both parties making them disconnected. To solve this, management attempts to bridge the disconnection by using dividends as a means of communicating private information to shareholders. Therefore, a dividend, say increasing, can be interpreted as companies doing well and therefore sends that there is a good prospect of the firm which is good news for the

investors. Furthermore, it can work the other way around, let's say companies are cutting the dividend to signal the decrease of performance by the company. This evidence was found by a study done by Pettit (1972). However, Lintner (1956) argued that management is evidently found hesitant to reduce dividends even when it is necessary and hence, only decided to increase dividend when they are convinced that earnings will continue to increase in the following future.

2.2.5. Clientele Effect

Clientele Effect explains that changes in other policies, such as transaction costs and taxes, would have an impact on the demand for stocks and the objectives of current investors. Furthermore, because dividends and capital gains are taxed differently, different types of investors respond differently to payment of dividends. According to the findings of the paper (Pettit, R. R., 1977), there is a strong clientele effect when investors are faced with different transaction costs and tax regimes on dividends.

2.3. Theoretical Prediction

Reflecting from the previous studies, both proxies of dividend policy, dividend yield and dividend payout ratio, and size of the company is expected to have inverse relationship with stock price volatility. Hence, the bigger the size, dividend yield, and the payout ratio of the company, the less volatile the stock price would be. This is represented by H_1, H_2, and H_3 as follows:

1) H_1 = Dividend yield is inversely related to stock price volatility.
2) H_2 = Dividend payout ratio is inversely related to stock price volatility.
3) H_3 = Size of a company is inversely related to stock price volatility

Hypothesis 1 to 3 is in line with the results of studies from Baskin (1989), Allen and Rachim (1996), and Hussainey et al. (2011) where they found evidence that dividend yield, dividend payout ratio, and size of a company is inversely related with the volatility of stock prices in three different market settings.

The positive relationship between other variables such as earnings volatility and leverage are also expected reflecting from the risk profile it signals to the investors and the market, meaning the more volatile and the higher the percentage of debt towards the total assets of a company, the volatile the stock prices would be. This is also in line with the results of the three studies previously mentioned which are Baskin (1989), Allen and Rachim (1996), and Hussainey et al. (2011). The hypothesizes are represented with H_4 and H_5:

4) H_4 = Leverage is positively related to stock price volatility.
5) H_5 = Earnings volatility is positively related to stock price volatility.

Chapter 3
Data Description and Methodology

3.1. Sample

The data used in this analysis consists of yearly data for companies listed in Indonesia Stock Exchange (IDX) in the period of year 2000 until 2021. A 22-yearlong data is utilized. This period is chosen because it represents data for the 21st century, and right after the recession happened in 1997 in Indonesia. In the 21st century, economy has changed and progressed massively not only in Indonesia but globally.

The main variables used in this analysis are stock price volatility and dividend policy which represented with two proxies which are dividend yield and dividend payout. Four control variables are also added to be used later in this analysis. Furthermore, categorical information such as sector and industry names are also included in this data.

To obtain the data, Thomson Reuters Refinitiv Eikon is used. An inclusion of inactive companies is done to avoid survivorship bias that might arise, which is in line with the suggestion of Hanauer and Linhart (2015). From the available 777 companies listed in the Indonesia Stock Exchange, companies in financial sectors are excluded, resulting in only 600 companies available to be utilised. With further restriction and filter, a total of 387 companies are then available to be used in the analysis. The list of the companies used in the data for the analyses can be seen in Appendix 1. While the constraints mentioned earlier are as follows:

1. Firms listed in the financial sector is dropped following the suggestion of Hussainey et al. (2011) due to the nature of the sector being heavily regulated.
2. Firms listed must have at least one cash dividend paid during the period of 2000 until 2021.
3. Companies must have data for at least 2 years consecutively to see any changes for the total asset.

3.2. Variables Measurement
3.2.1. Stock Price Volatility

Stock price volatility is represented by the variable labeled SPV. It works as the dependent variable of the regression model used in this study. The calculation of this variable is based on the formula proposed by Baskin (1989), where first the firms' annual highest and lowest stock prices of each year are obtained, and the range of the stock prices for each year is divided by the average of the highest and the lowest stock prices for each year and then squared. It then be averaged for all available years and the result is then square rooted. This variable seems like standard deviation but different. The reason to avoid standard deviation according to Hussainey et al. (2011) is the possibility of it being influenced by extreme values. The figures used in this calculation are obtained from *Refinitiv Eikon.*

3.2.2. Dividend Yield

Dividend yield is represented by the variable labeled as DY. It is one of the proxies of the dividend policy that will be used in the analysis. It works as one of the independent variables in the regression model. Dividend yield represent the ratio of dividend paid to company's stock price. To calculate the variable, it is the average of all available years of the annual amount of cash dividend paid to the common shareholders divided by the market value of the company of the year. The figures used in this calculation are obtained from *Refinitiv Eikon.*

3.2.3. Payout Ratio

Dividend payout ratio is represented by the variable labeled as DP. It is the other proxy of the dividend policy besides dividend yield. It works an independent variable along dividend yield in the regression model. This variable is calculated as the sum of the averaged ratio of cash dividends paid to the common shareholders relative to the net income after tax of all available years. The figures used in this calculation are obtained from *Refinitiv Eikon.*

3.2.4. Firm Size

Firm size is represented by the variable labeled as Size. It works as one of the control variables in the regression model. This variable is calculated as a base 10 logarithm transformation of the average market value of the firm for all available years. The figures used in this calculation are obtained from *Refinitiv Eikon.*

3.2.5. Leverage

The ratio of debt relative to total asset of a company or also known as leverage is represented as variable labeled as Leverage. It is one of the control variables used in the regression model. This variable is calculated as the average of the sum of the ratio between long term debt relative to total asset of the firm. The figures used in this calculation are obtained from *Refinitiv Eikon.*

3.2.6. Growth in Assets

Asset growth or represented in a variable labeled as Growth is one of the control variables used in the regression model. This variable is calculated as the average of the sum of the change of total assets at the end of the year relative to the total assets in the beginning of the year of the firm. The figures used in this calculation are obtained from *Refinitiv Eikon.*

3.2.7. Earnings Volatility

Earning's volatility or represented as variable labeled as EV is one of the control variables used in the regression model. This variable is calculated as the square root of the average of the sum of the squared standard deviation of the ratio of operating income or EBIT (Earnings Before Interests and Taxes) relative to total assets of the firm. The figures used in this calculation are obtained from *Refinitiv Eikon.*

3.3. Methodology

To analyze the relationship between stock price volatility and dividend policy, multiple least square regressions is used in this analysis. The regression model used in this study consists of stock price volatility as the dependent variable and dividend policy proxies which are dividend yield and dividend payout ratio as the independent variables. Following the recommendation of Baskin (1989), an addition of control variables such as firm size, ratio of long-term debt to total assets, asset growth, and earning's volatility of the company is done to account for factors that might affect stock price volatility and of dividend policy.

A correlation analysis is also done to check the correlation between each variable and to examine in case there is an existence of multicollinearity that might affect the statistical significance of the variables.

The first regression model is the regression between stock price volatility as dependent variable and dividend yield and dividend payout as the independent variables to examine the relationship between each proxy of dividend policy which are dividend yield and dividend payout towards stock price volatility. The regression model (1) is as follows:

$$PVol_i = a_1 + a_2\,DY + a_3\,DP + e \tag{1}$$

Previous studies have reported different results for this model of regression, having Baskin (1989) reported a significant negative relationship between stock price volatility with dividend yield and dividend payout, Allen and Rachim (1996) with positive relationship between stock price volatility and dividend yield but negative relationship between stock price volatility and dividend payout, and Hussainey et al. (2011) reported a positive relationship between stock price volatility and dividend yield and a strong negative significant relationship between stock price volatility and dividend payout. The multicollinearity or a close relationship between both dividend yield and dividend payout as also demonstrated in many previous studies such as Allen and Rachim (1996) and Hussainey et al. (2011) might be the cause the problem to the results mentioned earlier as there are also other factors that affect the volatility of stock prices. Hence, an inclusion of control variable is done to resolve the problems. The control variables that were mentioned earlier in the section are then included in the regression model as follow:

$$P.Vol_i = a_1 + a_2\,DY + a_3\,DP + a_4\,Size + a_5\,Leverage + a_6\,EV + e \tag{2}$$

Furthermore, industry pattern might also be the reason for of the close correlation between stock price volatility and stock price volatility more than the individual policy of each company alone. Therefore, an introduction of industry dummy variables into the regression model is done. The companies are divided into two broad classification which are industrial and service industry. The first dummy would be the companies in the service industry while the second dummy would be the companies in the industrial industry. The regression model with the dummy is as follow:

$$P.Vol_i = a_1 + a_2\,DY + a_3\,DP + a_4\,Size + a_5\,Leverage + a_6\,EV + a_7\,Dum + e \tag{3}$$

The coefficient of the companies in the service industry, which is represented by the first dummy, is represented by the intercept in the regression result.

Chapter 4
Empirical Results

A broad description of the characteristics or the descriptive statistics of the variables used in this study is given in the table 1. The statistical reports of the variables such as the statistical mean, median, standard deviation, variance, until the number of observations can be derived from the table.

Looking at table 1 which contains descriptive statistics from the data of the Indonesian Stock Exchange (IDX) from the year 2000 until 2021, a mean of the stock price volatility of 1.5 percent is derived from this period with a range from 0.18 percent to 4.7 percent. To check whether the dataset suffer from large outliers, the median in the descriptive statistics can be used to provide the insight. In this case, it can be seen from the variable of dividend payout where the mean is 45.79 percent, and the median is 24.92 percent which indicate that the dataset suffers from large outliers. However, other studies such as Hussainey et al. (2011) also have data that suffers from large outliers with their variable asset growth.

Table 1: Descriptive Statistics

	SPV	DY	DP	Size	Leverage	Growth	EV
Mean	0.015421	0.029943	0.457881	28.21373	0.177461	0.084845	0.083372
SE (Mean)	0.000392	0.002438	0.066559	0.087463	0.028752	0.007057	0.009684
Median	0.013413	0.020192	0.249152	28.24546	0.115411	0.093180	0.051752
Std. Dev.	0.007706	0.047958	1.30937	1.7206	0.56561	0.138834	0.190502
Variance	0.000059	0.0023	1.714459	2.960452	0.319914	0.019275	0.036291
Min	0.001832	0	-3.078965	23.58961	0	-1.537719	0.005872
Max	0.046811	0.761527	14.18547	33.00773	9.93002	0.821267	2.478452
Observations	387	387	387	387	387	387	387

Notes: SPV: Stock Price Volatility, DY: Dividend Yield, DP: Dividend Payout, Size: Size of the listed firms, Leverage: Debt percentage to total asset, Growth: Asset Growth rate, EV: Earning volatility

Table 2 provide insights of the correlation between the variable utilized for the study. Based on the table, stock price volatility and dividend yield have a negative correlation (-0.0811) which is as expected. This is in line with the findings of Hussainey et al. (2011) which was -0.2583 and Baskin (1989) which was -0.643. However, it is contradictory with the finding of Allen and Rachim (1996), which was positive (0.006).

Furthermore, dividend payout is also in the same track which is a negative correlation (-0.0285) with stock price volatility which is also as expected. This is in line with the findings of Hussainey et al. (2011) which was -0.4446, Allen and Rachim (1996) which was -0.210, and Baskin (1989) which was -0.542.

A moderate and highly significant correlation between dividend yield and dividend policy with value of 0.4580 (approximately 50 percent) can also be seen from the table, raising concern of the possibility of multicollinearity which could be a problem. This is similar with the correlation obtained in the study of Hussainey et al. (2011) which was 0.6684 (approximately 70 percent) and Allen and Rachim (1996) which was 0.424 (approximately 50 percent). This led to a modification in the regression equation later due to the possible multicollinearity between the two-dividend policy proxy which could pose a potential problem. Moreover, a study found that Multicollinearity exists when the correlation between two independent variables is equal to or greater than 70 percent (Drury, 2008). Hence, the inclusion of control variables in the regression will be done to see any changes in the results.

The Correlation between the rest of the variables with stock price volatility are in line with the predicted sign. However, a strong and significant positive correlation (0.8277) between earnings volatility and leverage can be seen from the table, indicating a multicollinearity that exists between the two variables. This is similar with what occur between the variable of size and earnings volatility in the study of Hussainey et al. (2011). Moreover, a strong and significant correlation also occur between asset growth and leverage (-0.6507) and asset growth and earnings volatility (-0.6962). The multicollinearity between the control variables mentioned before is in contrast with Allen and Rachim (1996). Therefore, regression equation (2) and (3) is also done with and without one of the two variables that has multicollinearity to see whether there are any changes which can be seen in the table 7 and 8.

The other interesting correlation that can be seen from the table is the significant negative correlation between size and stock price volatility (-3248), size and dividend yield (-0.1183), and size and dividend payout (-0.1061). This is in line with the expectation where a bigger company tend to be well-established hence have a stabile stock price. The expectation expands to the extent that more stable stock price give out less dividend (represented by dividend payout and dividend yield) because they are considered less risky which is also reflected in the

correlation table with the negative correlation between firm size and earnings volatility (-0.0362). Also, the negative correlation between growth and both dividend yield (-0.0560) and dividend payout (-0.0272) is also as expected as growing firms tend to have not much profit to share to the shareholders, hence any profit obtained would be reinvested into the company for the future growth of the company itself.

Table 2: Correlation Analysis

	SPV	DY	DP	Size	Leverage	Growth	EV
SPV	1						
DY	-0.0811	1					
DP	-0.0285	0.4580***	1				
Size	-0.3248***	-0.1183**	-0.1061**	1			
Leverage	0.1607***	-0.0411	-0.0245	0.0457	1		
Growth	-0.2219***	-0.0560	-0.0272	0.2112***	-0.6507***	1	
EV	0.1836***	0.0115	-0.0362	-0.0105	0.8277***	-0.6962***	1

Notes: (***) denotes significance at 1%; (**) at 5%.

SPV: Stock Price Volatility, DY: Dividend Yield, DP: Dividend Payout, Size: Size of the listed firms, Leverage: Debt percentage to total asset, Growth: Asset Growth rate, EV: Earning volatility

Table 3 shows the result of the regression equation (1). The regression results of stock price volatility show a negative relationship between stock price volatility with a coefficient of -0.0138 which is similar with the result of Baskin (1989) which was -0.643 and the contrary with the positive result that both Hussainey et al. (2011) and Allen and Rachim (1996) obtained. On the other hand, the regression shows a positive relationship between stock price volatility and dividend payout with a coefficient of 0.0000645 which is different with Baskin (1989), Hussainey et al. (2011), and Allen and Rachim (1996) which obtained negative results. This could be the result of the moderate correlation and a possible multicollinearity mentioned earlier.

Table 3. Results of regression equation (1) explaining the relationship between share price volatility, dividend yield, and dividend payout ratio

	Coefficient	Std. Err.	t-statistics	p-value
Dividend Yield	-0.0138343	0.0091928	-1.50	0.133
Dividend Payout	0.0000645	0.0003367	0.19	0.848
(Constant)	0.0158056***	0.0004625	34.18	0.000

$$R^2 = 0.0067, \text{Adjusted } R^2 = 0.0015, \text{F-stat.} = 1.29, \text{F-prob} = 0.2767$$

$$\text{the model used is SPV} = a_1 + a_2 * DY + a_3 * DP$$

Table 4. Results of regression equation (2) explaining the relationship between share price volatility, dividend yield, and dividend payout ratio with the introduction of control variables including size, leverage, and earnings volatility

	Coefficient	Std. Err.	t-statistics	p-value
DY	-0.0189766**	.0085886	-2.21	0.028
DP	-0.0000258	.0003134	-0.08	0.935
Size	-0.0015273***	.0002138	-7.15	0.000
Leverage	0.0009201	.0011552	0.80	0.426
EV	0.005071	.0034282	1.48	0.140
(Constant)	0.0585064***	.0060798	9.62	0.000

$$R^2 = 0.1543, \text{Adjusted } R^2 = 0.1433, \text{F-stat.} = 13.91, \text{F-prob} = 0.0000$$

$$\text{the model used is SPV} = a_1 + a_2 * DY + a_3 * DP + a_4 * \text{Size} + a_5 * \text{Leverage} + a_6 * EV + e$$

Notes: (***) denotes significance at 1%; (**) at 5%.

SPV: Stock Price Volatility, DY: Dividend Yield, DP: Dividend Payout, Size: Size of the listed firms, Leverage: Debt percentage to total assets, EV: Earning volatility

Next, an inclusion of control variables in the regression equation is done to see any changes that would happen with the coefficient of dividend payout. This regression is represented with regression equation (2). Regression result of stock price volatility with dividend policy proxies and control variables is shown at table 4. After the inclusion of control variables in the regression equation (2), the coefficient of dividend payout became negative while the result of the other variables was exactly as expected. Another interesting result that can be seen is that the coefficient of dividend yield increased and become significant after the inclusion of the control variables. The correlated explanation that can be pulled from this result is that dividend policy on its own is not the determining factor of stock price volatility. This is in line with the expectation and exactly as hypothesized. However, the insignificant coefficient that dividend payout has is not exactly as hypothesized. To check the problem and the reason behind it, dividend yield and dividend payout were simultaneously dropped from the equation and the results are shown in the table 5 and 6.

Table 5 shows that by dropping dividend payout from the regression, there was not much difference in the values of the coefficient of the variables, only a slight increase in the

coefficient. Table 6 shows the result of the regression when dividend yield was dropped from the equation. Like table 5, there is not much difference in the values of each variable, but there's a moderate increase in the coefficient of dividend payout. This insignificance is unsimilar with the other comparable studies such as Baskin (1989), Hussainey et al. (2011), and Allen and Rachim (1996) which all reported the same negative relationship between dividend payout and stock price volatility but also significant.

Table 5. Results of regression equation (2) with dividend payout ratio dropped explaining the relationship between share price volatility and dividend yield, with the introduction of control variables including size, leverage, and earnings volatility

	Coefficient	Std. Err.	t-statistics	p-value
DY	-.0192979**	.007638	-2.53	0.012
Size	-.0015262***	.000213	-7.16	0.000
Leverage	.000914	.0011514	0.79	0.428
EV	.0050933	.0034131	1.49	0.136
(Constant)	.0584713***	.0060569	9.65	0.000

$R^2 = 0.1543$, Adjusted $R^2 = 0.1455$, F-stat. $= 17.43$, F-prob $= 0.0000$

the model used is $\text{SPV} = a_1 + a_2 * \text{DY} + a_3 * \text{Size} + a_4 * \text{Leverage} + a_5 * \text{EV} + e$

Table 6. Results of regression equation (2) with dividend yield dropped explaining the relationship between share price volatility and dividend payout ratio, with the introduction of control variables including size, leverage, and earnings volatility

	Coefficient	Std. Err.	t-statistics	p-value
DP	-.0003409	.0002805	-1.22	0.225
Size	-.0014949***	.0002143	-6.97	0.000
Leverage	.0011743	.0011553	1.02	0.310
EV	.0043158	.0034284	1.26	0.209
(Constant)	.0571848***	.0060809	9.40	0.000

$R^2 = 0.1543$, Adjusted $R^2 = 0.1455$, F-stat. $= 17.43$, F-prob $= 0.0000$

the model used is $\text{SPV} = a_1 + a_2 * \text{DP} + a_3 * \text{Size} + a_4 * \text{Leverage} + a_5 * \text{EV} + e$

Notes: (***) denotes significance at 1%; (**) at 5%.

SPV: Stock Price Volatility, DY: Dividend Yield, DP: Dividend Payout, Size: Size of the listed firms, Leverage: Debt percentage to total assets, EV: Earning volatility

Next, the insignificance result of variable leverage and earnings volatility can be seen from the previous results of regression from 4, 5, and 6. Looking back at the correlation table, it might be caused by the strong and significant correlation between both variables. Hence, to check

whether this correlation is statistically significant or not, a dropping of both variables consecutively is done just like the dropping of dividend yield and dividend payout variables earlier. The regression result is represented by table 7 and 8. As can be seen by table 7 and 8, a dropping between variable leverage and earnings volatility resulted in an increase in coefficient between the two variable and the coefficient that previously was insignificant became significant after the dropping of the correlated variable while the sign of the two variables and the rest of the variables remains the same. Hence it is proven that the relationship between leverage and the earnings volatility is statistically significant.

Table 7. Results of regression explaining the relationship between share price volatility, dividend yield, and dividend payout ratio, with control variables including size, and leverage, dropping earnings volatility from the previous regression equation (2)

	Coefficient	Std. Err.	t-statistics	p-value
DY	-.01771**	.0085591	-2.07	0.039
DP	-.0000623	.0003129	-0.20	0.842
Size	-.0015533***	.0002134	-7.28	0.000
Leverage	.0023397***	.0006439	3.63	0.000
(Constant)	.0593893***	.0060598	9.80	0.000

$R^2 = 0.1495$, Adjusted $R^2 = 0.1406$, F-stat. = 16.79, F-prob = 0.0000

the model used is $SPV = a_1 + a_2 * DY + a_3 * DP + a_4 * Size + a_5 * Leverage + e$

Table 8. Results of regression explaining the relationship between share price volatility, dividend yield, and dividend payout ratio, with control variables including size, and earnings volatility, dropping leverage from the previous regression equation (2)

	Coefficient	Std. Err.	t-statistics	p-value
DY	-.0196579**	.0085418	-2.30	0.022
DP	-0.00000997	.0003126	-0.03	0.975
Size	-.0015118***	.0002128	-7.11	0.000
EV	.0073395***	.0019071	3.85	0.000
(Constant)	.0580568***	.0060506	9.60	0.000

$R^2 = 0.1529$, Adjusted $R^2 = 0.1441$, F-stat. = 17.24, F-prob = 0.0000

the model used is $SPV = a_1 + a_2 * DY + a_3 * DY + a_4 * Size + a_5 * EV + e$

Notes: (***) denotes significance at 1%; (**) at 5%.

SPV: Stock Price Volatility, DY: Dividend Yield, DP: Dividend Payout, Size: Size of the listed firms, Leverage: Debt percentage to total assets, EV: Earnings Volatility

Furthermore, an introduction of industry dummy variable was done to check the relationship between stock price changes and the industry factors as represented by a regression equation (3) and the results are reported in table 9. However, based on the table, there's no significant relationship between stock price changes and industry factors.

Table 9. Results of regression equation explaining the relationship between share price volatility, dividend yield, and dividend payout ratio with the introduction of control variables including size, earnings volatility, and industry dummy to check whether industry factors have influence towards stock price changes

	Coefficient	Std. Err.	t-statistics	p-value
DY	-0.0202516**	0.0086209	-2.35	0.019
DP	-0.00000898	0.0003129	-0.03	0.977
Size	-0.0014951***	0.0002152	-6.95	0.000
EV	0.007385***	0.0019107	3.86	0.000
Industrial	0.0004	0.0007447	0.54	0.591
(Constant)	0.0574134***	0.0061736	9.30	0.000

$R^2 = 0.1536$, Adjusted $R^2 = 0.1425$, F-stat. = 13.83, F-prob = 0.0000

the model used is $SPV = a_1 + a_2 * DY + a_3 * DP + a_4 * Size + a_5 * EV + a_6 * Dum_2 + e$

Notes: (***) denotes significance at 1%; (**) at 5%.

SPV: Stock Price Volatility, DY: Dividend Yield, DP: Dividend Payout, Size: Size of the listed firms, EV: Earning volatility, Industrial: Industrial Industry dummy

Table 10. Results of regression equation explaining the relationship between share price volatility, dividend yield, and dividend payout ratio with the introduction of control variables including size, earnings volatility, growth, and industry dummy to check rate of return and duration effects

	Coefficient	Std. Err.	t-statistics	p-value
DY	-0.0203693**	0.0086228	-2.36	0.019
DP	-0.0000187	0.0003131	-0.06	0.952
Size	-0.0014372***	0.0002237	-6.43	0.000
Growth	-0.0036272	0.0038062	-0.95	0.341
EV	0.0055468**	0.0027153	2.04	0.042
Industrial	0.0003888	0.0007449	0.52	0.602
(Constant)	0.0562519***	0.0062934	8.94	0.000

$R^2 = 0.1556$, Adjusted $R^2 = 0.1423$, F-stat. = 11.67, F-prob = 0.0000

the model used is $SPV = a_1 + a_2 * DY + a_3 * DP + a_4 * Size + a_5 * Growth + a_6 * EV + a_7 * Dum_2 + e$

Notes: (***) denotes significance at 1%; (**) at 5%.

SPV: Stock Price Volatility, DY: Dividend Yield, DP: Dividend Payout, Size: Size of the listed firms, Growth: Asset Growth rate, Debt percentage to total assets, EV: Earning volatility, Industrial: Industrial Industry dummy

Lastly, an introduction of growth variable in a new regression equation (4) was done to inspect the rate of return and duration effects that according to Baskin (1989) are like likely to be correlated with the rate of growth in the firm's capital. The theory suggests that both the rate of return and the duration effects would be evident when there is a decreasing in the coefficient of variable dividend yield. Hence, a regression was done to check the effects and was reported in table 10.

From table 10, the addition of variable growth into the regression equation didn't increase the coefficient of dividend yield. On the contrary, the addition of growth increased the coefficient of dividend yield by a small margin. Furthermore, it can also be seen that growth does not affect stock price volatility significantly which can be seen from a coefficient of -0.0036 with insignificant *t-statistics* while the other direction of the rest of the variables remains the same. Hence, it can be concluded that there is no evidence of rate of return and duration effects.

Chapter 5

Discussion and Conclusion

This observation was done to examine the relationship of the stock price volatility and the dividend policy which is represented by the dividend yield and dividend payout. The dataset used is a 22-year data of companies listed in the Indonesia Stock Exchange (IDX) in the 21st century which ranged from 2000 to 2021. The raw values were obtained *Refinitiv Eikon.* With three constraints applied, the data shrink from 777 to 387 companies. An inclusion of inactive company is done to avoid survivorship bias. Furthermore, the relationship between stock price volatility and other variables such as size of the company, asset growth rate, debt percentage to total assets, earnings volatility also done in this study. In addition, the effect of rate of return, duration, and industry pattern was also done to examine other possibilities that might affect the relationship.

In this study, stock price volatility works as the dependent variable while dividend policy which consists of dividend yield and payout works as independent variable of the model. An inclusion of a total of four control variable were added in the model to neutralize any bias that might occur in the regression. The control variables are size, growth, leverage, and earnings volatility.

The empirical findings show evidence of a significant negative relationship between the stock price volatility and the dividend yield, and between stock price volatility and dividend payout ratio. The findings on dividend yield are consistent with Baskin (1989) but not consistent with the findings of Hussainey et al. (2011) and Allen and Rachim (1996). However, the findings on dividend payout are consistent with the findings of Hussainey et al. (2011), Allen and Rachim (1996), and Baskin (1989). The general findings suggests that dividend yield is the main determinant of the stock price volatility.

Furthermore, among four control variables, size and growth had the highest correlation with stock price volatility with significant negative relationship. It suggests that the larger the size of the firm, and the more the asset of the firm is growing, the less volatile the stock price will be.

This study help giving important insights to management and investors whose concerned about the volatility of stock prices especially for companies in Indonesia. Not only it gives ideas on

the driver of stock prices and the considerations investors should have, but it also shows how management should formulate dividend policies for their companies as any decision on the changes of dividend policy would have a consequence, positive or negative.

Limitation and Suggestion

Some limitation from this study is the limited time scope of the data, which only cover the data from 2000 to 2021. It doesn't include data from the 90s which is when the great recession happened in Indonesia happened where many companies were fallen. With one of the constraints being it excluded companies in the financial sectors, it cannot explain the relationship of stock price volatility and dividend policy in the financial sector, which is following the similar study of Hussainey at al. (2011) due to the highly regulated nature of the sector. Furthermore, in developing countries, accounting standards are often not properly handled, and as a result, firm performance may not be accurately reflected. However, there are plenty of improvements that are available to improve the quality and this scope of the study in the future such as comparing the effect studied in different regions or countries that could have the same characteristics or different at all.

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Appendices

Appendix 1. Companies List

ABM Investama Tbk PT	Eterindo Wahanatama Tbk PT	Link Net Tbk PT	Roda Vivatex Tbk PT
Ace Hardware Indonesia Tbk PT	Eureka Prima Jakarta Tbk PT	Lion Metal Works Tbk PT	Rukun Raharja Tbk PT
Acset Indonusa Tbk PT	Ever Shine Tex Tbk PT	Lionmesh Prima Tbk PT	Salim Ivomas Pratama Tbk PT
Adaro Energy Tbk PT	Express Transindo Utama Tbk PT	Lippo Karawaci Tbk PT	Samindo Resources Tbk PT
Adhi Karya (Persero) Tbk PT	Fajar Surya Wisesa Tbk PT	Logindo Samudramakmur Tbk PT	Sampoerna Agro Tbk PT
Adi Sarana Armada Tbk PT	Fast Food Indonesia Tbk PT	Lotte Chemical Titan Tbk PT	Samudera Indonesia Tbk PT
Agro Yasa Lestari PT Tbk	FKS Food Sejahtera Tbk PT	Madusari Murni Indah Tbk PT	Sarana Meditama Metropolitan Tbk PT
Agung Podomoro Land Tbk PT	FKS Multi Agro Tbk PT	Mahaka Media Tbk PT	Sarana Menara Nusantara Tbk PT
AirAsia Indonesia Tbk PT	Fortune Indonesia Tbk PT	Mahaka Radio Integra Tbk PT	Saranacentral Bajatama Tbk PT
Akasha Wira International Tbk PT	Fortune Mate Indonesia Tbk PT	Mahkota Group Tbk PT	Saraswanti Anugerah Makmur PT
AKR Corporindo Tbk PT	Gajah Tunggal Tbk PT	Malindo Feedmill Tbk PT	Sariguna Primatirta Tbk PT
Alakasa Industrindo Tbk PT	Galva Technologies Tbk PT	Mandom Indonesia Tbk PT	Sarimelati Kencana Tbk PT
ALAM SUTERA REALTY Tbk PT	Garuda Maintenance Facility AeroAsia Tbk PT	Map Boga Adiperkasa Tbk PT	Sat Nusapersada Tbk PT
Alkindo Naratama Tbk PT	Garuda Metalindo Tbk PT	Mark Dynamics Indonesia Tbk PT	Satyamitra Kemas Lestari Tbk PT
Alumindo Light Metal Industry Tbk PT	Garudafood Putra Putri Jaya Tbk PT	Martina Berto Tbk PT	Sawit Sumbermas Sarana Tbk PT
Anabatic Technologies Tbk PT	Gaya Abadi Sempurna Tbk PT	Matahari Department Store Tbk PT	Sekar Bumi Tbk PT
Ancora Indonesia Resources Tbk PT	Gema Grahasarana Tbk PT	Matahari Putra Prima Tbk PT	Sekar Laut Tbk PT

Aneka Gas Industri Tbk PT	Gihon Telekomunikasi Indonesia Tbk PT	Mayora Indah Tbk PT	Selamat Sempurna Tbk PT
Aneka Tambang Tbk PT	Global Mediacom Tbk PT	Medco Energi Internasional Tbk PT	Selaras Citra Nusantara Perkasa Tbk PT
Anugerah Kagum Karya Utama Tbk PT	Global Sukses Solusi Tbk PT	Media Nusantara Citra Tbk PT	Semen Baturaja (Persero) Tbk PT
Argha Karya Prima Industry Tbk PT	Globe Kita Terang Tbk PT	Medikaloka Hermina Tbk PT	Semen Indonesia (Persero) Tbk PT
Arita Prima Indonesia Tbk PT	Golden Eagle Energy Tbk PT	Mega Perintis Tbk PT	Sepatu Bata Tbk PT
Armada Berjaya Trans Tbk PT	Golden Energy Mines Tbk PT	Megapolitan Developments Tbk PT	Siantar Top Tbk PT
Arwana Citramulia Tbk PT	Goodyear Indonesia Tbk PT	Merck Tbk PT	Sidomulyo Selaras Tbk PT
Asahimas Flat Glass Tbk PT	Gowa Makassar Tourism Development Tbk PT	Merdeka Copper Gold Tbk PT	Sillo Maritime Perdana Tbk PT
Asia Pacific Investama Tbk PT	Gozco Plantations Tbk PT	Metro Realty Tbk PT	Siloam International Hospitals Tbk PT
Asiaplast Industries Tbk PT	GTS Internasional Tbk PT	Metrodata Electronics Tbk PT	Sinar Mas Agro Resources and Technology Tbk PT
Astra Agro Lestari Tbk PT	Gudang Garam Tbk PT	Metropolitan Kentjana Tbk PT	Sinergi Inti Plastindo PT
Astra Graphia Tbk PT	Hanjaya Mandala Sampoerna Tbk PT	Metropolitan Land Tbk PT	Siwani Makmur Tbk PT
Astra International Tbk PT	Hartadinata Abadi Tbk PT	Midi Utama Indonesia Tbk PT	Soechi Lines Tbk PT
Astra Otoparts Tbk PT	Harum Energy Tbk PT	Millennium Pharmacon International Tbk PT	SOHO Global Health PT
Ateliers Mecaniques D'Indonesie Tbk PT	Hero Supermarket Tbk PT	Mitra Adiperkasa Tbk PT	Solusi Bangun Indonesia Tbk PT
Austindo Nusantara Jaya Tbk PT	Hexindo Adiperkasa Tbk PT	Mitra Investindo Tbk PT	Sona Topas Tourism Industry Tbk PT
Bakrie & Brothers Tbk PT	Hotel Sahid Jaya International Tbk PT	Mitra Keluarga Karyasehat Tbk PT	Sreeya Sewu Indonesia Tbk PT
Bakrie Sumatera Plantations Tbk PT	Humpuss Intermoda Transportasi Tbk PT	Mitra Pemuda Tbk PT	Sri Rejeki Isman Tbk PT

Bakrieland Development Tbk PT	ICTSI Jasa Prima Tbk PT	Mitra Pinasthika Mustika Tbk PT	Steel Pipe Industry of Indonesia Tbk PT
Bali Towerindo Sentra Tbk PT	Ifishdeco PT	Mitrabahtera Segara Sejati Tbk PT	Sugih Energy Tbk PT
Baramulti Suksessarana Tbk PT	Impack Pratama Industri Tbk PT	Mitrabara Adiperdana Tbk PT	Sumber Alfaria Trijaya Tbk PT
Barito Pacific Tbk PT	Indah Kiat Pulp & Paper Tbk PT	MNC Investama Tbk PT	Sumi Indo Kabel Tbk PT
Bayan Resources Tbk PT	Indal Aluminium Industry Tbk PT	MNC Land Tbk PT	Summarecon Agung Tbk PT
Bayu Buana Tbk PT	Indika Energy Tbk PT	MNC Sky Vision Tbk PT	Sunson Textile Manufacturer Tbk PT
Bekasi Fajar Industrial Estate Tbk PT	Indo Acidatama Tbk PT	Modern Internasional Tbk PT	Suparma Tbk PT
Bentoel International Investama Tbk PT	Indo Kordsa Tbk PT	Modernland Realty Tbk PT	Superkrane Mitra Utama Tbk PT
Berkah Prima Perkasa Tbk PT	Indo Straits Tbk PT	Mulia Boga Raya PT	Supra Boga Lestari Tbk PT
Berlian Laju Tanker Tbk PT	Indo Tambangraya Megah Tbk PT	Multi Bintang Indonesia Tbk PT	Supreme Cable Manufacturing & Commerce Tbk PT
Berlina Tbk PT	Indo-Rama Synthetics Tbk PT	Multi Indocitra Tbk PT	Surya Citra Media Tbk PT
Betonjaya Manunggal Tbk PT	Indocement Tunggal Prakarsa Tbk PT	Multifiling Mitra Indonesia Tbk PT	Surya Esa Perkasa Tbk PT
Binakarya Jaya Abadi Tbk PT	Indofarma Tbk PT	Multipolar Tbk PT	Surya Pertiwi Tbk PT
Bintang Mitra Semestaraya Tbk PT	Indofood CBP Sukses Makmur Tbk PT	Multipolar Technology Tbk PT	Surya Semesta Internusa Tbk PT
BISI INTERNATIONAL Tbk PT	Indofood Sukses Makmur Tbk PT	Multistrada Arah Sarana Tbk PT	Surya Toto Indonesia Tbk PT
Blue Bird Tbk PT	Indointernet Tbk PT	Mustika Ratu Tbk PT	TBS Energi Utama Tbk PT
Buana Lintas Lautan Tbk PT	Indomobil Sukses Internasional Tbk PT	Nippon Indosari Corpindo Tbk PT	Telkom Indonesia (Persero) Tbk PT
Budi Starch & Sweetener Tbk PT	Indonesia Fibreboard Industry PT	Nusa Konstruksi Enjiniring Tbk PT	Tembaga Mulia Semanan Tbk PT

Bukaka Teknik Utama Tbk PT	Indonesia Kendaraan Terminal Tbk PT	Nusa Raya Cipta Tbk PT	Tempo Inti Media Tbk PT
Bukit Asam Tbk PT	Indonesia Pondasi Raya Tbk PT	Nusantara Almazia Tbk PT	Tempo Scan Pacific Tbk PT
Bumi Resources Tbk PT	Indonesia Transport & Infrastructure Tbk PT	Nusantara Infrastructure Tbk PT	Tifico Fiber Indonesia Tbk PT
Bumi Serpong Damai Tbk PT	Indonesian Paradise Property Tbk PT	Nusantara Inti Corpora Tbk PT	Tigaraksa Satria Tbk PT
Bumi Teknokultura Unggul Tbk PT	Indopoly Swakarsa Industry Tbk PT	Obm Drilchem PT	Timah Tbk PT
Bundamedik Tbk PT	Indoritel Makmur Internasional Tbk PT	Pabrik Kertas Tjiwi Kimia Tbk PT	Tiphone Mobile Indonesia Tbk PT
Buyung Poetra Sembada Tbk PT	Indosat Tbk PT	Pakuwon Jati Tbk PT	Tira Austenite Tbk PT
Cardig Aero Services Tbk PT	Indospring Tbk PT	Pan Brothers Tbk PT	Tirta Mahakam Resources Tbk PT
Catur Sentosa Adiprana Tbk PT	Industri Dan Perdagangan Bintraco Dharma Tbk PT	Panca Budi Idaman Tbk PT	Total Bangun Persada Tbk PT
Central Omega Resources Tbk PT	Industri Jamu dan Farmasi Sido Muncul Tbk PT	Panorama Sentrawisata Tbk PT	Tower Bersama Infrastructure Tbk PT
Centratama Telekomunikasi Indonesia Tbk PT	Inocycle Technology Group Tbk PT	Paramita Bangun Sarana Tbk PT	Trada Alam Minera Tbk PT
Champion Pacific Indonesia Tbk PT	Intanwijaya Internasional Tbk PT	Pelangi Indah Canindo Tbk PT	Trans Power Marine Tbk PT
Chandra Asri Petrochemical Tbk PT	Intermedia Capital Tbk PT	Pelat Timah Nusantara Tbk PT	Transcoal Pacific Tbk PT
Charoen Pokphand Indonesia Tbk PT	Intiland Development Tbk PT	Pelayaran Nelly Dwi Putri Tbk PT	Trias Sentosa Tbk PT
Chitose Internasional Tbk PT	Intraco Penta Tbk PT	Pelita Samudera Shipping Tbk PT	Tridomain Performance Materials Tbk PT
Cikarang Listrindo Tbk PT	Island Concepts Indonesia Tbk PT	Pembangunan Graha Lestari Indah Tbk PT	Trikomsel Oke Tbk PT
Ciputra Development Tbk PT	Itama Ranoraya PT	Pembangunan Jaya Ancol Tbk PT	Trisula International Tbk PT

Cita Mineral Investindo Tbk PT	J Resources Asia Pasifik Tbk PT	Pembangunan Perumahan (Persero) Tbk PT	Trisula Textile Industries Tbk PT
Citra Marga Nusaphala Persada Tbk PT	Jakarta Setiabudi Internasional Tbk PT	Perdana Gapura Prima Tbk PT	Tunas Alfin Tbk PT
Citra Tubindo Tbk PT	Japfa Comfeed Indonesia Tbk PT	Perdana Karya Perkasa Tbk PT	Tunas Baru Lampung Tbk PT
Colorpak Indonesia Tbk PT	Jasa Armada Indonesia Tbk PT	Perusahaan Gas Negara Tbk PT	Tunas Ridean Tbk PT
Communication Cable Systems Indonesia Tbk PT	Jasa Marga (Persero) Tbk PT	Perusahaan Perkebunan London Sumatra Indonesia Tbk PT	Ulima Nitra Tbk PT
Cowell Development Tbk PT	Jasuindo Tiga Perkasa Tbk PT	Petrosea Tbk PT	Ultrajaya Milk Industry Tbk PT
Dana Brata Luhur PT	Jaya Agra Wattie Tbk PT	Phapros Tbk PT	Unggul Indah Cahaya Tbk PT
Darya-Varia Laboratoria Tbk PT	Jaya Konstruksi Manggala Pratama Tbk PT	Pikko Land Development Tbk PT	Uni-charm Indonesia PT
Delta Djakarta Tbk PT	Jaya Real Property Tbk PT	Pinago Utama TBK PT	Unilever Indonesia Tbk PT
Delta Dunia Makmur Tbk PT	Jembo Cable Company Tbk PT	Plaza Indonesia Realty Tbk PT	United Tractors Tbk PT
Dharma Polimetal Tbk PT	Kabelindo Murni Tbk PT	PP Presisi Tbk PT	Vale Indonesia Tbk PT
Dharma Samudera Fishing Industries Tbk PT	Kalbe Farma Tbk PT	PP Properti Tbk PT	Victoria Care Indonesia Tbk PT
Dharma Satya Nusantara Tbk PT	Kapuas Prima Coal Tbk PT	Prima Alloy Steel Universal Tbk PT	Visi Media Asia Tbk PT
Duta Anggada Realty Tbk PT	Kawasan Industri Jababeka Tbk PT	Prodia Widyahusada Tbk PT	Voksel Electric Tbk PT
Duta Pertiwi Nusantara Tbk PT	Kedaung Indah Can Tbk PT	Provident Agro Tbk PT	Wahana Pronatural Tbk PT
Duta Pertiwi Tbk PT	Kencana Energi Lestari PT	PT Temas Tbk	Waskita Beton Precast Tbk PT
Dyandra Media International Tbk PT	Keramika Indonesia Assosiasi Tbk PT	Pudjiadi And Sons Tbk PT	Waskita Karya (Persero) Tbk PT

Eagle High Plantations Tbk PT	Kimia Farma Tbk PT	Pudjiadi Prestige Tbk PT	WEHA Transportasi Indonesia Tbk PT
Ekadharma International Tbk PT	Kino Indonesia Tbk PT	Puradelta Lestari Tbk PT	Wijaya Karya (Persero) Tbk PT
Elang Mahkota Teknologi Tbk PT	KMI Wire and Cable Tbk PT	Pyridam Farma Tbk PT	Wijaya Karya Bangunan Gedung Tbk PT
Electronic City Indonesia Tbk PT	Kobexindo Tractors Tbk PT	Radiant Utama Interinsco Tbk PT	Wijaya Karya Beton Tbk PT
Elnusa Tbk PT	Kokoh Inti Arebama Tbk PT	Ramayana Lestari Sentosa Tbk PT	Wilmar Cahaya Indonesia Tbk PT
Emdeki Utama Tbk PT	Krakatau Steel (Persero) Tbk PT	Ratu Prabu Energi Tbk PT	Wintermar Offshore Marine Tbk PT
Energi Mega Persada Tbk PT	Lautan Luas Tbk PT	Resource Alam Indonesia Tbk PT	Wismilak Inti Makmur Tbk PT
Enseval Putera Megatrading Tbk PT	LCK Global Kedaton Tbk PT	Ricky Putra Globalindo Tbk PT	XL Axiata Tbk PT
Erajaya Swasembada Tbk PT	Leyand International Tbk PT	Rig Tenders Indonesia Tbk PT	Yanaprima Hastapersada Tbk PT
Eratex Djaja Tbk PT	Limas Indonesia Makmur Tbk PT	Rimo International Lestari Tbk PT	