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The Effect of Dividend Policy and Market to Book Value of Equity on Firm Value in Energy Sector Companies Listed on Indonesia Stock Exchange

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A B S T R A C T
This study aims to determine the effect of dividend policy and market to book value of equity on the value of energy sector companies listed on Indonesia Stock Exchange for the 2017–2021 period. This study uses quantitative method with purposive sampling as method of selecting samples and 30 companies were selected as samples. The analytical method used is a multiple linear regression. The results of this study indicate that partially dividend policy has a significant positive effect on firm value and market to book value of equity has a significant negative effect on firm value.

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INTRODUCTION

The purpose of the company is to maximize its value so that it can maximize prosperity for investors. Increased corporate value becomes an achievement for the company and the desire of investors because, if the value of the company increases, the welfare of investors also increases. That means the firm's value is directly proportional to the welfare of its shareholders. Maximizing the firm's value is very important for business continuity because this will be the perception of the success rate of the company for investors, which is often associated with the stock price. The firm value can be determined by comparing the price to book value (PBV) obtained from the market price per sheet with its book value. To increase the firm's value, the company can find out in advance what factors significantly affect it. Many factors can affect the firm's value, and this study will focus on dividend policy and market-to-book value of equity.

Dividend policy can be seen from the Dividend Payout Ratio (DPR), which is the percentage of profit distributed by the company in the form of cash dividends. Based on signalling theory, a dividend policy is considered a positive signal by investors to invest because investors prefer a certain return on investment. Market to book value of equity ratio gives a clue as to where the value of the company depends on the company's expenditures, so the company's prospects can be seen from the market to book value of equity ratio, which states that the company's growth prospects are partially expressed in market prices, which assume that the company's growth prospects are partially incorporated in the stock price. The market-to-book value of equity ratio can be used to alert investors.

Indonesia has a wealth of very abundant natural resources, and the energy sector is one of the pillars of a country's economic development because of its role as a provider of energy resources that are indispensable for economic growth. One type of company that is included in the energy sector is a mining company. Reporting from ekon.go.id, mining companies are one of the main contributors to continued positive growth and are able to sustain the Indonesian economy. This is evidenced by the position of Indonesia, which is ranked at the top as a country with the most natural resource production. Reported from cnbcindonesia.com, some shares of companies in the energy sector generate significant dividends from net profit. For example, Bukit Asam Tbk. distribute 100% of net profit in 2021 as dividends, Indo Tambangraya Megah Tbk. also, Adaro Energy Tbk. distributed 70% of net profit in 2021 as dividends. Therefore, the energy sector is a promising for investors and interesting to be the object of this study.

Previous research conducted by Agung, Hasnawati, & Huzaimah (2021) shows that dividend policy has a positive effect on firm value, and research conducted by Panjaitan & Akmalia (2020) shows that the market to book value of equity has a significant positive effect on firm value. However, research conducted by Lumapow & Tumiwa (2017) shows that dividend policy is negative and significant to firm value, and research conducted by Nikmah & Amanah (2019) shows that the market to book value of equity has a negative effect on firm

value. Based on the differences from the results of previous studies, it is therefore interesting to conduct research with the title "The Effect of Dividend Policy and Market to Book Value of Equity on Firm Value in Energy Sector Companies Listed on Indonesia Stock Exchange." Through this research, it can be seen whether these two variables have a significant influence on firm value, because these variables can be used by companies for policy making and will certainly have a major impact on company growth in the future.

THEORETICAL REVIEW

Signaling Theory

Signal are an action taken by a firm's management that provides clues to investors about how management views the firm's prospects (Brigham & Houston, 2019, p. 500). Signaling theory encourages the management to provide information about company's financial statement to investors. The financial statement that the company published to the outsider is the signal. The outsider party which is investor will react the signal with two responds, the first one is the signal considered as good news or the signal is considered as bad news.

Dividend Policy

Dividend policy is a policy taken by financial management to determine the comparative amount of profit to be distributed to shareholders in the form of cash dividends, smoothing dividends, stock dividends, stock splits, and the withdrawal of outstanding shares. All of these policy alternatives are intended to increase the prosperity of shareholders (Darmawan, 2018, p. 16).

Market to Book Value of Equity

Smith and Watts (1992) contend that the market-to-book value of equity (MBVE) ratio reflects the expectation that the market price will be greater than the expected return on equity in the future.

Firm Value

Firm value is an investor's perception of the level of success of managers in managing the company's resources entrusted to them, which is often associated with stock prices (Indrarini, 2019, p. 2).

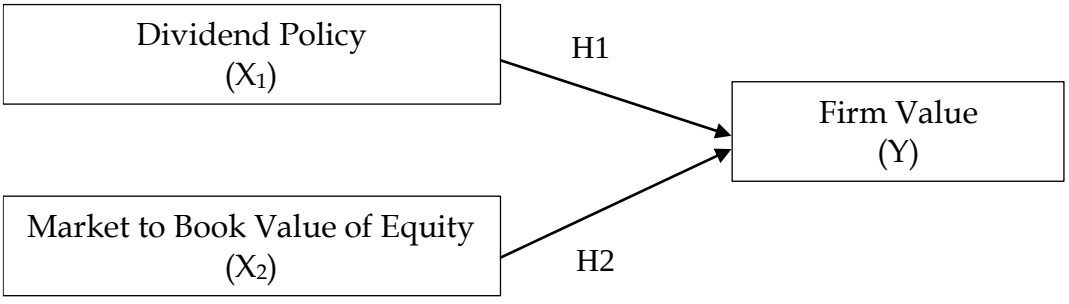

Figure 1. Conceptual Framework

The Effect of Dividend Policy on Firm Value

According to signaling theory, dividend policy is a positive signal for investors to invest because investors prefer certainty in the return they receive and minimize uncertainty in the investment they provide. With many investors buying shares, it will increase the share price, thereby increasing firm value. Previous research conducted by Agung, Hasmawati, & Huzaimah (2021), and Saksana (2021), shows that dividend policy has a positive effect on firm value. According to the previous description, the hypothesis in this study is:
H_1: Dividend policy has a positive effect on firm value.

The Effect of Market to Book Value of Equity on Firm Value

If the company is able to maximize its ability through investments to generate profits in accordance with the amount of funds tied up, it can increase the value of the company. The higher market to book value of equity ratio, the higher the firm value. Previous research conducted by Viveronica & Amanah (2017), and Panjaitan & Akmalia (2020), shows that market to book value of equity has a positive effect on firm value. According to the previous description, the hypothesis in this study is:
H_2: Market to book value of equity has a positive effect on firm value.

METHODOLOGY

Types of Research

This type of research is quantitative and uses associative methods.

Population, Sample, and Sampling Technique

The 76 energy companies that are listed on Indonesia Stock Exchange make up the population. The determination of the number of samples in this study was obtained by non-probability sampling using a purposive sampling technique with criteria for the availability of financial statement and annual reports and companies that distribute dividends in the period 2017–2021. After collecting the data, the sample that met the criteria laid out in this study consisted of 30 companies.

Operational Definition and Measurement of Variables

Dividend policy (X_1) is a policy taken by financial management to determine the comparative amount of profit to be distributed to shareholders in the form of cash dividends. Dividend policy in this study is proxies by Dividend Payout Ratio (DPR):

$$Dividend\ Payout\ Ratio = \frac{Dividend\ per\ share}{Earnings\ per\ share} \qquad (1)$$

Market to book value of equity (X_2) is a price-based ratio which states that the company's growth prospects are partly stated in market prices which assumes that the company's growth prospects are partially included in the stock price (Agustina, 2016).

$$MBVE = \frac{(Total\ asset - Total\ Equity) + (Number\ of\ Shares\ Outstanding\ x\ Closing\ price)}{Total\ Equity}$$

Firm value (Y) is an investor's perception of the level of success of managers in managing the company's resources entrusted to them, which is often associated with stock prices (Indrarini, 2019, p. 2). Firm value in this study is proxies by Price to Book Value (PBV):

$$Price\ to\ Book\ Value = \frac{Market\ value\ per\ share}{Book\ value\ per\ share} \quad \text{.....(2)}$$

Types, Data Sources, and Data Collection Techniques

The type of data that will be used in this study is quantitative data. The source of data used in this study is secondary data, financial statements and annual reports of energy sector companies listed on Indonesia Stock Exchange for 2017–2021, downloaded from the official website of Indonesia Stock Exchange (idx.co.id). Data collection in this study was carried out using the documentation method.

Data Analysis Technique

Multiple linear regression analysis was used to analyze the data in this study. A multiple linear regression testing is processed using the IBM SPSS 26 application. It begins with descriptive statistics and then continues with the classical assumption test performed as a prerequisite for hypothesis testing.

RESULTS

Descriptive Statistical Analysis

Descriptive statistics are part of the data analysis, which will provide an initial description of each variable used in this study. The results of descriptive statistics can be seen in table 1.

Table 1. Descriptive Statistic Test Result

	N	Minimum	Maximum	Mean	Std. Deviation
Dividend Policy	150	.01	1.87	.4269	.34448
Market to Book Value of Equity	150	-1.30	1.87	.1655	.67697
Firm Value	150	.33	10.36	1.7831	1.55023
Valid N (listwise)	150				

Based on table 1 shows that the amount of data in each variables is 150, the minimum value of variable dividend policy is 0.01, the maximum value is 1.87, mean is 0.4269 and standard deviation is 0.34448. The minimum value of

variable market to book value of equity is -1.30, maximum value is 1.87, mean is 0.1655, and standard deviation is 0.67697. The minimum value of variable firm value is 0.33, maximum value is 10.36, mean is 1.7831, and standard deviation is 1.55023.

Outlier Test

Before including the sample data in the classical assumption test, it is necessary to first eliminate data that are classified as outliers. The outlier test is carried out by converting data values into standardized scores, or what is called a Z-score. In this study, the criteria for determining outliers based on the Z-score, namely a Z-score > +2.50 or < -2.50, will be categorized as outliers and must be eliminated. The data outliers are as follows:

1. Observation-18, the Samindo Resources Tbk. has the Z-score of 3,08618 on dividend policy in 2017.
2. Observation-27, the Transcoal Pacific Tbk. has the Z-score of 2,51098 on market to book value of equity in 2017.
3. Observation-97, the Baramulti Suksessarana Tbk. has the Z-score of 2,56540 on dividend policy in 2020.
4. Observation-101, the Golden Energy Mines Tbk. has the Z-score of 2,54624 on dividend policy in 2020.
5. Observation-107, the Mitrabara Adiperdana Tbk. has the Z-score of 2,94104 on dividend policy in 2020.
6. Observation-119, the Trans Power Marine Tbk. has the Z-score of 4,18929 on dividend policy in 2020
7. Observation-131, the Golden Energy Mines Tbk. has the Z-score of 5,53317 on firm value in 2021.

After eliminating 7 data outliers using the Z-score value, it turns out that 143 data still contain outliers. So it is necessary to eliminate outliers again by using a feature in the IBM SPSS application, namely, casewise diagnostics.

Table 2. Outlier Test with Casewise Diagnostics

Case Number	Std. Residual	Firm Value	Predicted Value	Residual
12	5.568	9.22	1.9395	7.27691
36	3.587	6.75	2.0591	4.68790
40	3.646	6.43	1.6696	4.76488
66	3.363	6.16	1.7638	4.39480
a. Dependent Variable: Firm Value				

Based on table 2, observations 12, 36, 40, and 66 are categorized as data outliers, and after eliminating these 4 observations, the remaining samples are 139.

Table 3. Outlier Test with Casewise Diagnostics

Case Number	Std. Residual	Firm Value	Predicted Value	Residual
8	3.217	5.06	2.0576	3.00052
66	4.381	5.88	1.7982	4.08627
a. Dependent Variable: Firm Value				

Based on table 3, observations 8 and 66 are categorized as data outliers, and after eliminating these 2 observations, the remaining samples are 137.

Table 4. Outlier Test with Casewise Diagnostics

Case Number	Std. Residual	Firm Value	Predicted Value	Residual
34	3.224	4.14	1.4665	2.66913
89	3.053	4.24	1.7166	2.52820
a. Dependent Variable: Firm Value				

Based on table 4, observations 34 and 89 are categorized as data outliers, and after eliminating these 2 observations, the remaining samples are 135.

Table 5. Outlier Test with Casewise Diagnostics

Case Number	Std. Residual	Firm Value	Predicted Value	Residual
10	3.123	4.09	1.6834	2.40262
117	3.055	3.81	1.4567	2.35035
a. Dependent Variable: Firm Value				

Based on table 5, observations 10 and 117 are categorized as data outliers, and after eliminating these 2 observations, the remaining samples are 133.

Table 6. Outlier Test with Casewise Diagnostics

Case Number	Std. Residual	Firm Value	Predicted Value	Residual
58	3.067	3.51	1.3129	2.19579
a. Dependent Variable: Firm Value				

Based on table 6, observations 58 are categorized as data outliers, and after eliminating this observations, the remaining samples are 132.

Classic Assumption Test

Table 7. Normality Test One-Sample Kolmogorov-Smirnov

		Unstandardized Residual
N		132
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.68638681
Most Extreme Differences	Absolute	.075
	Positive	.075
	Negative	-.059
Test Statistic		.075
Asymp. Sig. (2-tailed)		.063[c]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Based on table 7, it shows the Asymp. Sig. (2–tailed) is 0.063, which means the value is greater than 0.05, and it explain that the residual data is normally distributed.

Table 8. Multicollinearity Test

Coefficients[a]								
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
1	(Constant)	1.158	.105		11.058	.000		
	Dividend Policy	.424	.218	.141	2.483	.045	.996	1.004
	Market to Book Value of Equity	-.666	.088	.548	-7.579	.000	.996	1.004
a. Dependent Variable: Firm Value								

Based on table 8, it shows that all independent variables had tolerance value > 0.10 and VIF value < 10.00. So it can be concluded that there is no multicollinearity among the independent variables.

Table 9. Heteroscedasticity Test

Correlations					
			Dividend Policy	**Market to Book Value of Equity**	**Unstandardized Residual**
Spearman's rho	Dividend Policy	Correlation Coefficient	1.000	.021	-.011
		Sig. (2-tailed)	.	.815	.896
		N	132	132	132
	Market to Book Value of Equity	Correlation Coefficient	.021	1.000	.007
		Sig. (2-tailed)	.815	.	.937
		N	132	132	132
	Unstandardized Residual	Correlation Coefficient	-.011	.007	1.000
		Sig. (2-tailed)	.896	.427	.
		N	132	132	132

Based on table 9, it shows that the values of Sig. (2-tailed) dividend policy variable of 0.896 and market to book value of equity variable of 0.427 which means more than a significance value of 0.05 so that it can be concluded that there is no heteroscedasticity.

Table 10. Autocorrelation Test

Model Summary[b]					
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
1	.574[a]	.329	.319	.69169	1.952
a. Predictors: (Constant), Market to Book Value of Equity, Dividend Policy					
b. Dependent Variable: Firm Value					

Based on table 10, dw value of 1.952. This value will be compared with the table value using a significance value of 5%. The number of samples in this study was 132 (n) with the number of independent variables being 2 (k = 2), so the dU value in the Durbin-Watson table was 1.747. Based on the basis of decision making from the Durbin-Watson test, if the equation dU < dw < 4 – dU is found, then it is stated that there is no autocorrelation symptom. The equation in this study becomes like this 1.747 < 1.952 < 2.253. So it can be concluded that the analysis model meets the autocorrelation free requirements.

Multiple Linear Regression Analysis

Table 11. Multiple Linear Regression

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	1.158	.105		11.058	.000
	Dividend Policy	.424	.218	.141	2.483	.045
	Market to Book Value of Equity	-.666	.088	.548	-7.579	.000
a. Dependent Variable: Firm Value						

Based on table 11, the constant value is 1.158, the coefficient of variable dividend policy (X_1) is 0.424 and the coefficient of variable market to book value of equity (X_2) is -0.666. The regression model equation will be as follows:

$$Y = 1.158 + 0.424\ X_1 - 0.666\ X_2 \quad \text{.....(3)}$$

Hypothesis Testing

Table 12. Coefficient Determinant Test

Model Summary[b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.574[a]	.329	.319	.69169
a. Predictors: (Constant), Market to Book Value of Equity, Dividend Policy				
b. Dependent Variable: Firm Value				

On table 12 shows that R square is 0.329 which means the ability of independent variable (dividend policy and market to book value of equity) to explain the variability of dependent variable (firm value) is 32.9% and the rest, 67.1% is explain by others factor.

Table 13. T Test Result

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	1.158	.105		11.058	.000
	Dividend Policy	.424	.218	.141	2.483	.045
	Market to Book Value of Equity	-.666	.088	.548	-7.579	.000
a. Dependent Variable: Firm Value						

This study discuss 3 variables in it and the amount of sample is 132 data, α = 5% so t table on this study is 1.978. On table 13 shows that dividend policy t value is 2.483, which means t value > t table because 2.483 > 1.978, and sig. value is 0.045 which is smaller than 0.05. This result shows that partially dividend policy has a significant positive effect on the firm value. On table 13 shows that market to book value of equity t value is -7.579, which means t value > t table, because 7.579 > 1.978, and sig. value is 0.000 which is smaller than 0.05, but there is negative sign on market to book value of equity, so this result shows that partially market to book value of equity has a significant negative effect on the firm value.

Table 14. F Test Result

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	30.314	2	15.157	31.680	.000[b]
	Residual	61.718	129	.478		
	Total	92.031	131			
a. Dependent Variable: Firm Value						
b. Predictors: (Constant), Market to Book Value of Equity, Dividend Policy						

F table on this test is 3.070. Based on table 14 F value is 31.680, so F value > F table because 31.680 > 3.070 and sig. shows 0.000 which is smaller than 0.05. It means that dividend policy and market to book value of equity simultaneously affect firm value.

DISCUSSIONS

Effect of Dividend Policy on Firm Value

The results of this study indicate that the dividend policy has a significant positive effect on firm value, so the hypothesis 1 is accepted. T. This proves that the dividend policy, as measured using the Dividend Payout Ratio (DPR) formula from year to year in energy sector companies listed on Indonesia Stock

Exchange, has an important role in increasing the firm value as measured using the Price to Book Value (PBV) formula. Dividend policy greatly affects the firm value. This is because investors' main goal is to improve their welfare by expecting returns in the form of dividends, and the company expects continuous growth in order to maintain its viability as well as provide welfare to its shareholders.

Companies with a high dividend policy will be interpreted by investors as meaning that the company's ability to distribute dividends in a higher amount will increase the return on shares owned by investors. The results of this study are in accordance with the signal theory, dividend policy can send a positive signal to investors. The study's results align with research conducted by Agung, Hasnawati, & Huzaimah (2021) that dividend policy has a positive effect on firm value. However, the results of this study contradict research conducted by Lumapow & Tumiwa (2017), which shows that dividend policy is negative and significant to firm value.

Effect of Market to Book Value of Equity on Firm Value

The results of the study show that the market to book value of equity ratio has a significant negative effect on firm value of energy sector companies listed on Indonesia Stock Exchange in the 2017–2021 research period, so the hypothesis 2 is rejected. The negative effect of the market to book value of equity ratio on firm value means that when there is an increase in the market to book value of equity ratio, it will result in a decrease in firm value, and vice versa, when there is a decrease in the market to book value of equity ratio, it will result in an increase in firm value. The negative effect of the market to book value of equity ratio on firm value can be caused by the company's distribution of dividends.

When a company decides to prioritize using retained earnings to pay dividends rather than increasing share capital, this will indicate a tendency to erode the company's equity and have an impact on decreasing the company's value. Companies are more focused on paying dividends so that the market to book value of equity ratio is low, so the dividends that will be paid by the company are getting bigger, which automatically means that the company has a high free cash flow. The study's results align with research conducted by Nikmah & Amanah (2019) which shows that the market to book value of equity has a negative effect on firm value. However, the results of this study contradict research conducted by Panjaitan & Akmalia (2020) which shows that the market to book value of equity has a significant positive effect on firm value.

CONCLUSIONS AND RECOMMENDATIONS

Based on the result of data analysis and discussion in the previous chapter, it can be concluded from this as follows:

1. Dividend policy has a significant positive effect on firm value in energy sector companies listed on Indonesia Stock Exchange for the 2017–2021 period.
2. Market to book value of equity has a significant negative effect on firm value in energy sector companies listed on Indonesia Stock Exchange for the 2017–2021 period.

This research is expected to be able to provide information to investors about the effect of dividend policy and market to book value of equity on firm value so that when investors want to buy company shares, they have information about the company, especially about dividend policy and market to book value of equity from energy sector companies.

FURHTER STUDY

This study has limitations, including only utilizing two independent variables and one dependent variable. In addition, the study sample consists of just 30 samples. Only companies in the energy sectors were included in the five-year survey. Suggestions for further research are to increase the number of research samples by increasing the study period and population coverage and adding other variables that influence firm value.

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