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The Effect of Return on Assets and Return on Equity on Company Value with Dividends as Intervening Variables in Manufacturing Companies in the Basic and Chemical Industry Sectors Listed on the Indonesia Stock Exchange in 2017-2020

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Abstract. The purpose of this study was to determine the effect of Return On Assets and Return On Equity on Firm Value with Dividends as an intervening variable. The sampling technique used is purposive sampling method. Based on the sample selection criteria, a sample of 32 issuers was obtained with a total of 128 data. The data analysis techniques used were classical assumption test, pant analysis, multiple correlation coefficient analysis (R), coefficient of determination analysis (R2), simultaneous effect test (F test). , and simultaneous effect test (t test). Based on the classical assumption test, the data is normally distributed, there is no multicollinearity between variables, there is no autocorrelation, there is no heteroscedasticity and the data used is linear. Based on the value of R (correlation) equation 1 Return On Assets and Return On Equity have a low relationship to the Dividend variable. equation 2 between Return On Assets and Return On Equity through Dividends as an intervening variable has a moderate relationship. The coefficient of determination (R2) equation 1 is 2.1%. The effect of dividends is explained by Return On Assets and Return On Equity. Equation 2 is obtained by 29% the influence of firm value is explained by Return On Assets and Return On Equity. The results of the path analysis show that dividends mediate the return on assets variable on firm value and dividends do not mediate return on equity on firm value. The value of the F test of equation 1 Return On Assets and Return On Equity simultaneously has no significant effect on dividends. Equation 2 Return On Assets and Return On Equity through intervening variables have a significant effect on firm value. The results of the t-test of equation 1 Return On Assets and Return On Equity simultaneously have no significant effect on dividends. Equation 2 Return On Assets, Return On Equity through Dividends as an intervening variable simultaneously does not have a significant effect on firm value.

Keywords: Return On Assets, Return On Equity, Dividends, Firm Value

Introduction

The company is an organization in the business world and one of the main drivers of the economy of a country, because the company is the real driver of business activities. This proves that many developing countries and even developed countries in the world use companies to support their country's economy (Amit & Zott, 2012; Oleyinka & Chadire, 2021). Including the state of Indonesia has a strong dependence on existing companies, both state companies and private companies as a driver of its economy. Therefore, companies are required to provide the best in order to provide positive values and benefits for the country.

The Indonesia Stock Exchange (IDX) is one of the stock exchanges that can provide investment opportunities and sources of financing in an effort to support national economic development (Eka, 2018). IDX also plays a role in efforts to develop large local investors to create a stable Indonesian capital market (Sudiyatno et al., 2012; Devi et al., 2020). The IDX has several sectors and indices that have merged into it. Public companies listed on the IDX are classified into 10 sectors, namely the agricultural sector, the mining sector, the basic and chemical industry sector, the various industrial sector, the consumer goods industry sector, the property sector, real estate and building construction, the infrastructure sector, utilities and transportation, the financial sector, the manufacturing sector and the trade, services and investment sectors. In this study, researchers took data only on the basic and chemical industrial sectors.

In Indonesia itself, the development of manufacturing companies in the basic and chemical industrial sectors is quite rapid, this can be seen from the development of basic and chemical industrial companies listed on the BEI every year, which always increases, therefore it is possible that these basic and chemical industry companies are very much needed by the public (Nugraha & Riyadhi, 2019). Society and its prospects will benefit now and in the future. Based on data obtained from the IDX, the following is a list of companies and closing stock prices in the basic and chemical industry sectors (Widyastuti, 2018). The closing price of shares for the period 31 December 2017-2020. From the table, it can be seen that the issuer with the highest share price is the issuer code INTP with a share price in 2017 of Rp. 21,950, in 2018 of Rp. 18,450, in 2019 of Rp. 19,025, and in 2020 of Rp. 14,475 while the lowest share price is Rp. with the issuer code of the Indonesian Embassy and CPRO with a share price of IDR 50 for four years from 2017-2020.

The value of the company describes a certain condition that has been achieved by a company and affects the level of public trust in the company. Investors perceive the value of the company to the company's success in managing resources at the end of the current year which is reflected in the company's stock price. Firm value is measured by price book value (PBV), PBV describes how much the market appreciates the book value of a company's shares. The higher this ratio means the market believes in the company's prospects. Companies that have good management, it is expected that the PBV of the company is at least 1. PBV can be measured by comparing the stock market price with the book value of the stock. PBV data shows the highest PBV value is owned by a company with issuer code SMBR with a value of IDR 11,051 in 2017, while the lowest value is owned by companies with issuer code CPRO with a book value of IDR -1,673. In 2018 the highest is the issuer code MARK of IDR 6,346 , 2019 is the issuer code CPRO of Rp 9,040. The year 2020 is the issuer code, while the lowest value is the issuer code MARK of IDR 8,965, while the lowest value in 2018-2020 is owned by the company with the issuer code JKSW with a value of IDR -018.

Profitability can be used as an indicator to assess a company. The size of a profitability measure value can have a direct impact on the company because it will affect potential investors whether they will invest their capital or not. Profitability is an attractive thing for investors. Companies with high profitability will be interested in their shares by investors. This means that the higher the profit value, the higher the value of the company. Because a high profit value will provide good prospects for the company so that it can attract investors to participate in increasing the demand for shares. The increasing demand for shares will cause the value of the company to also increase. In measuring profitability, it can be done in several ways, including return on assets (ROA) and return on equity (ROE). ROA is used to measure the effectiveness of the company in generating profits by utilizing its assets. The higher the ROA value indicates that the company is more efficient in utilizing its assets in obtaining profits, so that the value of the company is increasing. While ROE is used to measure the effectiveness of the company in generating profits by utilizing its own capital. The data used to calculate ROA is to use total assets. The following shows total asset data for the year 2017-2020. The highest total assets are companies with the issuer code INKP for four periods where in 2017 it was Rp. 103,428,629,328,000, in 2018 it was Rp. 126,723,419,253,000, in 2019 it was Rp. 118,186,997,050,000 and in 2020 it was Rp. 123,042,395,970. .000 while the lowest in 2017 was owned by a company with the issuer code LMSH of Rp 161,163,426,840. in 2018, with the issuer code SPMA with a value of Rp 2,282,845,633. In 2019, the company with the issuer code KDSI was IDR 1,253,650.08,375. In 2020, the lowest is the company with the issuer code LMSH of IDR 1,253,650.08,375.

In addition, the following data are used to calculate ROA and ROE of net income after tax. The following shows the net profit after tax data for the year 2017-2020. In 2017 the highest net profit after tax was TPIA issuer code of IDR 15,467,318,064,000 while the lowest was CPRO issuer code with a loss of IDR -2,639,420,000,000. In 2018 the highest net profit after tax was the issuer code INKP of IDR 8,517,811,086,000, while the lowest was the issuer code KRAS with a loss of IDR -2,426,030,892,000. In 2019 and 2020 the highest net profit after tax was the issuer code INKP in 2019 of IDR 3,814,295,390,000 and in 2020 of IDR 353,299,343,980 while the lowest in 2019 was the issuer code KRAS with a loss of IDR 2,426,030,892 .000. In 2020, the issuer code is AMFG with a loss of IDR -625,424,000,000.

In addition, the following data is used to calculate ROE, namely Total Equity. The following shows Total Equity data for 2017-2020. The total equity that has the highest value for four periods is the company with the issuer code INKP in 2017 of Rp. 43,592,681,556,000. In 2018, it was Rp. 54,615,554,892,000 in 2019, it was Rp. 55,682,915,977,000 and in 2020 it was Rp. 63,695,757,550,000 while the lowest was in 2017 with the issuer code CPRO with a loss of Rp -1,780,456,000,000. In 2018-2020 the lowest value is the JKSW issuer code where in 2018 it suffered a loss of IDR -494,359,842,213 in 2019 of IDR -495,728,971,268 and in 2020 it suffered a loss of IDR -496,867,323,363.

Assets and equity are the main sources of funds that must be met by the company to support all activities and provide benefits in the future. The company's ability to generate net income will affect the level of dividend payments. The more profit the company generates, the higher the possibility that the company will be able to fulfill its obligations to pay dividends to shareholders. With high dividend payments to shareholders will increase the value of the company.

Dividend is basically a determination of the amount of profit or return that will be given to shareholders (investors) because dividends are an important part of investment returns in the stock market. The dividend used in this study is the Dividend Payout Ratio (DPR). DPR is a financial ratio used to measure the percentage of net profit distributed to shareholders in the form of dividends for a certain period of time. Data on dividends paid by manufacturing companies in the basic and chemical industry sectors listed on the IDX in 2017-2020. From the table it can be seen that companies with the issuer code INTP paid the highest dividends in 2017-2020 with a value of Rp. 3,418,759,000,000 in 2017. In 2018 it was Rp. 2,576,024,000,000. Year 2019 was Rp. 2,024,015,000. .000 in 2020 amounting to Rp. 2,658,896,000,000. The purpose of this study was to determine the effect of ROA, ROE on firm value with dividends as an intervening variable in manufacturing companies in the basic and chemical industrial sectors on the IDX in 2017-2020.

Methods

The type of research used in this research is associative research. According to Sugiyono (2017): "Associative research aims to determine the influence or relationship between two or more variables. The population in this study is the basic industrial and chemical manufacturing companies listed on the BEI, the period used is 2017 to 2020. The sample is 32 companies during this research period with a total of 12 data.

Results and discussion

Calculation of Return on Assets

The higher the ROA means the higher the amount of net profit generated from each rupiah of funds embedded in total assets. Here's how to calculate using ROA. Case study at Japfa Comfeed Indonesia Tbk (JPFA) 2017.

$$ROA = \frac{Net\ profit}{Total\ aset} x\ 100\%$$

$$ROA = \frac{1.107.810.000.000}{21.088.870.000.000} x\ 100\% = 5{,}25\%$$

The ROA for Japfa Comfeed Indonesia Tbk (JPFA) in 2017 is 5.25%, meaning that every IDR 1,- the company's total assets can generate a net profit of 0.0525. This means that the company is quite capable of managing every asset value they have to generate net profit after tax. Ideally, the higher the ROA number, the better the assumption of the company's performance in terms of asset management. The results of the calculation of ROA in manufacturing companies in the basic and chemical industrial sectors consisting of 32 issuers can be seen in the following table.

Table 1. Results of Calculation of Return on Assets for Manufacturing Companies in the Basic and Chemical Industry Sector for the 2017-2020 Period (In Percentage (%))

No	Code	ROA			
		2017	2018	2019	2020
1	AGII	1,93	1,72	1,47	1,45
2	AMFG	0,62	0,08	1,51	7,62
3	ARNA	7,63	9,57	12,10	16,56
4	AKPI	0,49	2,09	1,96	0,79
5	BRNA	9,07	0,96	7,21	3,89

6	CPIN	10,18	16,46	12,37	11,63
7	DPNS	1,93	2,91	1,24	1,23
8	EKAD	9,56	8,68	7,99	7,55
9	FASW	6,36	12,82	3,23	3,07
10	IGAR	14,11	4,45	9,85	7,39
11	IMPC	3,98	4,45	3,72	2,91
12	INCI	5,45	4,26	3,41	3,15
13	INKP	5,41	6,72	3,23	3,47
14	INTP	6,44	4,12	6,62	6,61
15	JPFA	5,25	9,78	7,48	7,26
16	LION	1,36	2,11	0,43	0,44
17	LMSH	8,05	1,80	12,40	13,50
18	MAIN	1,20	6,56	3,28	3,08
19	MARK	20,68	25,75	19,94	15,05
20	MOLI	5,77	5,04	5,64	2,91
21	PBID	12,69	12,96	9,56	0,93
22	SMBR	2,90	1,37	0,54	1,96
23	SMGR	12,69	2,97	2,97	7,62
24	TBMS	4,60	3,34	3,85	4,49
25	TDPM	3,36	5,74	0,69	4,33
26	TOTO	9,87	11,97	4,82	4,42
27	TPIA	38,22	5,74	0,69	0,65
28	TKIM	1,06	26,09	18,94	4,98
29	TRST	1,15	1,47	0,89	0,93
30	UNIC	5,33	7,31	0,69	4,73
31	WSBP	6,70	7,25	4,99	7,99
32	WTON	4,82	5,48	4,94	1,45

Source: Processed Data, 2021

From Table 4.1 above, it shows that the results of the 2017-2020 ROA calculation have increased and decreased. According to Kasmir (2014): "The average standard of a good ROA must be above 30%. Conversely, if the ROA value is below 30%, it is categorized as not good". The ROA value that is categorized as good within four years is only companies with the issuer code TPIA in 2017. Meanwhile, the ROA value is categorized as not good because it is below the ROA standard in four years as many as 31 companies. It can be concluded that the ROA value in manufacturing companies in the Basic and Chemical Industry sector is categorized as not good because it does not reach 50% of companies that have standards above ROA.

Calculation of Return on Equity

ROE is a profitability ratio that can measure the ability of a company based on its net income by using its own capital. If the company has a small capital, then the ROE will be small, and vice versa. Case study at Intanwijaya Internasional Tbk (INCI) in 2018.

$$ROE = \frac{Net\ Profit}{Total\ equity} x\ 100\%$$

$$ROE = \frac{16.554.272.131}{319.952.419.798} x\ 100\% = 5{,}17\%$$

ROE for Intanwijaya Internasional Tbk (INCI) in 2018 was 5.17%. This shows that every IDR 1,- own capital generates a net profit of IDR 0.0517, which means the company is able to manage every equity value they have to generate net profit after tax. Ideally, the higher the ROE number, the better the company's working assumptions in terms of asset management. The results of other calculations can be seen in full in Table 2 below.

Table 2. Results of Calculation of Return on Equity, Manufacturing Companies in the Basic and Chemical Industry Sector for the 2017-2020 Period (In Percentage (%))

No	Code	ROE			
		2017	2018	2019	2020
1	AGII	2,91	3,10	3,13	3,11
2	AMFG	1,09	0,18	3,88	22,46
3	ARNA	11,87	14,43	18,50	25,00
4	AKPI	1,18	5,21	4,37	1,61
5	BRNA	20,90	2,11	17,10	9,25
6	CPIN	15,90	12,88	17,24	16,48
7	DPNS	2,23	2,15	1,40	1,38
8	EKAD	11,50	8,93	7,99	8,54
9	FASW	18,12	32,77	20,65	7,71
10	IGAR	16,38	9,25	11,33	8,64
11	IMPC	7,08	7,69	6,61	6,61
12	INCI	6,17	5,17	4,06	3,73
13	INKP	12,84	15,60	6,85	6,70
14	INTP	7,57	4,93	7,95	8,15
15	JPFA	11,31	10,85	16,46	16,51
16	TKIM	2,74	2,07	12,02	10,04
17	LION	2,05	1,95	0,62	0,62
18	LMSH	10,00	9,77	16,06	16,94
19	MAIN	2,86	2,57	7,51	7,79
20	MARK	28,20	34,45	29,43	25,55
21	MOLI	7,53	7,53	5,16	4,93
22	PBID	8,06	14,20	15,51	19,37
23	SMBR	4,30	2,19	0,86	3,36
24	SMGR	6,71	9,46	7,00	7,50
25	TBMS	20,77	16,54	12,39	11,32
26	TDPM	68,41	4,67	10,13	9,39
27	TOTO	16,47	17,97	7,31	7,13

28	TPIA	68,41	60,34	1,34	1,29
29	TRST	1,93	2,82	1,79	1,77
30	UNIC	7,53	6,71	6,46	5,71
31	WSBP	6,71	14,00	9,91	19,81
32	WTON	12,39	15,51	14,56	3,63

Source: Processed Data, 2021

Table 2 above shows that the results of the 2017-2020 ROE calculation have increased and decreased. According to Kasmir (2014): "The average ROE standard is good, which must be above 40%. Conversely, if the ROE value is below 40%, it is categorized as not good". ROE values that are categorized as good within four years are 2 companies above the standard ROE value. Meanwhile, the ROE value is categorized as not good because it is below the ROE standard in four years as many as 30 companies. It can be concluded that the value of ROE in manufacturing companies in the Basic and Chemical Industry sector is categorized as not good because it does not reach 50% of companies that have standards above ROE.

Calculating Company Value

The firm value used in this research is Price to Book Value. PBV is commonly referred to as the Price to Book Value Ratio. PBV is a measure that serves to see whether shares in a company can be said to be expensive or cheap. A case study on Semen Indonesia Tbk (SMGR) in 2019.

$$PBV = \frac{Stock\ Price}{Stock\ book\ value}$$

$$PBV = \frac{12.000}{5.713{,}868} = 2.100$$

The PBV for Semen Indonesia Tbk (SMGR) in 2018 is 2,100. This shows that if the PBV value is above Rp. 1, it can be concluded that the share price is quite expensive. The results of other calculations can be seen in full in Table 3 below.

Table 3. Price to Book Value Calculation Results, Manufacturing Companies in the Industrial, Basic and Chemical Sector Period 2017-2020 (In Rupiah)

No	Code	PBV			
		2017	2018	2019	2020
1	AGII	0.553	0.646	0.646	0.831
2	AMFG	0.046	0.445	0.437	0.421
3	ARNA	2.439	2.812	2.720	3.826
4	AKPI	0.438	0.413	0.202	0.282
5	BRNA	1.423	1.046	1.057	1.325
6	CPIN	3.133	6.110	5.058	4.856
7	DPNS	0.433	0.377	0.298	0.318
8	EKAD	0.392	0.700	0.772	0.971
9	FASW	4.069	4.493	4.066	4.042
10	IGAR	0.832	0.773	0.616	0.593

11	IMPC	4.087	3.311	3.604	4.308
12	INCI	0.275	0.352	0.241	0.480
13	INKP	0.678	1.157	0.757	0.895
14	INTP	3.290	2.925	3.034	2.403
15	JPFA	1.514	2.469	1.573	1.506
16	LION	0.880	0.744	0.528	0.381
17	LMSH	0.474	0.420	0.402	0.450
18	MAIN	0.974	1.647	1.109	0.846
19	MARK	7.288	6.346	5.744	8.965
20	MOLI	1.535	1.876	1.839	1.607
21	PBID	1.243	1.396	1.101	1.395
22	SMBR	11.051	5.004	1.255	3.156
23	SMGR	1.929	2.091	2.100	2.067
24	TBMS	0.668	0.532	0.458	0.474
25	TKIM	0.673	1.932	1.661	1.330
26	TDPM	2.719	1.559	1.209	635
27	TOTO	2.486	1.861	1.566	1.271
28	TPIA	4.733	4.122	7.558	6.334
29	TRST	0.532	0.502	0.491	0.497
30	UNIC	0.611	0.621	0.603	0.649
31	WSBP	1470	1,257	0.985	1.111
32	WTON	1.586	1.045	1.118	63.185

Sumber: Data Olahan, 2021

From Table 4.3 above, it can be seen that the results of the 2017-2020 PBV calculation have increased and decreased. Those with the highest PBV values in 2017 were issuers with the SMBR code in 2018 and 2020 MARK in 2019 TPIA. Meanwhile, the company with the lowest PBV value in 2017 was owned by a company with the 2018 AMFG issuer code INCI and in 2019-2020 AKPI.

Calculating Dividend

The dividend used in this study is the Dividend Payout Ratio. DPR is a financial ratio used to measure the percentage of net profit distributed to shareholders in the form of dividends for a certain period of time. Case study at Panca Budi Idaman Tbk (PBID) 2020.

$$DPR = \frac{Cash\ dividend\ per\ share\ (DPS)}{Earnings\ per\ share\ (EPS)}\ x\ 100\%$$

$$DPR = \frac{59{,}00}{199{,}28}\ x\ 100\% = \ 30\%$$

DPR for the 2020 Panca Budi Idaman Tbk (PBID). This shows that the company pays dividends of 30% of net income to shareholders. The results of other calculations can be seen in full in Table 4 below.

Table 4. Results of Calculation of Dividend Payout Ratio, Manufacturing Companies in the Basic and Chemical Industry Sector for the 2017-2020 Period (in Percentage)

No	Code	DPR				Rata-Rata
		2017	2018	2019	2020	
1	AGII	10	10	10	10	10
2	AMFG	9	20	10	2	30
3	ARNA	3	5	5	4	47
4	AKPI	5	11	14	4	29
5	BRNA	2	15	2	4	6
6	CPIN	8	8	5	4	6
7	DPNS	33	17	50	25	31
8	EKAD	9	15	16	27	17
9	FASW	3	2	4	3	3
10	IGAR	5	9	8	10	8
11	IMPC	7	8	5	5	58
12	INCI	11	7	8	8	13
13	INKP	3	6	14	6	8
14	INTP	18	22	14	15	18
15	JPFA	5	5	3	2	37
16	LION	22	18	18	30	39
17	LMSH	7	7	3	3	5
18	MAIN	17	12	32	34	24
19	MARK	3	2	30	29	16
20	MOLI	35	15	46	22	30
21	PBID	35	27	42	30	33
22	SMBR	18	19	25	27	66
23	SMGR	9	6	4	9	39
24	TBMS	12	12	16	17	15
25	TKIM	4	5	7	3	10
26	TDPM	7	14	2	2	6
27	TOTO	18	30	21	22	23
28	TPIA	1	5	23	29	15
29	TRST	37	22	36	34	32
30	UNIC	17	17	22	28	21
31	WSBP	32	30	30	18	46
32	WTON	24	21	29	10	21

Source: Processed Data, 2021

From Table 4 above, it can be seen that the results of the calculation of cash dividends in 2017-2020 have increased and decreased. Those who distributed the highest cash dividends in 2017 were companies with issuer code TRST in 2018 TOTO and WSPB in 2019 TRST and in 2020

IMPC. Meanwhile, the companies that distributed the lowest cash dividends in 2017 were companies with the issuer code TPIA in 2018 MARK in 2019 BRNA and in 2020 TDPM.

Classic assumption test

Normality test

The results of the calculation of the normality test of equation 1 can be seen in the following table.

Table 5. Normality Test Results Equation 1

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		128
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	11,11599968
Most Extreme Differences	Absolute	,158
	Positive	,158
	Negative	-,106
Kolmogorov-Smirnov Z		1,792
Asymp. Sig. (2-tailed)		,003
a. Test distribution is Normal. b. Calculated from data.		

Source: SPSS Processed Data 19, 2021

Table 4.5 above shows that all data are not normally distributed with asymp. Sig (2-tailed) 0.003 < 0.05 means that the data is not normally distributed, so in this study an approach is taken to treat abnormal data, by transforming the data into the form of Natural Logarithms (Ln). The results of the normality test of equation 1 after data transformation can be seen in the following table.

Table 6. Normality Test Results of Equation 1 After Data Transformation

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		128
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,85081568
Most Extreme Differences	Absolute	,050
	Positive	,049
	Negative	-,050
Kolmogorov-Smirnov Z		,563
Asymp. Sig. (2-tailed)		,909
a. Test distribution is Normal. b. Calculated from data.		

Source: SPSS Processed Data 19, 2021

Table 6 above shows that the data is normally distributed after transforming the data into a Natural Logarithmic (Ln) form. From the table above, it can be seen that the asymp value. Sig (2-tailed) 0.909> 0.05 means that the data is normally distributed and is suitable as a research model. The results of the normality test of equation 2 can be seen in the following table.

Table 7. Normality Test Results Equation 2

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		128
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	5,73422299
Most Extreme Differences	Absolute	,324
	Positive	,281
	Negative	-,324
Kolmogorov-Smirnov Z		3,660
Asymp. Sig. (2-tailed)		,000
a. Test distribution is Normal. b. Calculated from data.		

Source: SPSS Processed Data 19, 2021

Table 7 shows that all data are not normally distributed with asymp. Sig (2-tailed) 0.003 < 0.05 means that the data is not normally distributed, so in this study an approach is taken to treat abnormal data, by transforming the data into the form of Natural Logarithms (Ln). The results of the normality test of equation 2 after data transformation can be seen in the following table.

Table 8. Normality Test Results of Equation 2 After Data Transformation

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		128
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,98875250
Most Extreme Differences	Absolute	,072
	Positive	,055
	Negative	-,072
Kolmogorov-Smirnov Z		,815
Asymp. Sig. (2-tailed)		,521
a. Test distribution is Normal. b. Calculated from data.		

Source: SPSS Processed Data 19, 2021

Table 8 above shows that the data is normally distributed after transforming the data into a Natural Logarithmic (Ln) form. From the table above, it can be seen that the asymp value. Sig (2-tailed)

0.521> 0.05, it means that the data is normally distributed and suitable to be used as a research model.

Multicollinearity Test

Table 9. Multicollinearity Test Results Equation 1

Coefficients[a]											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	16,956	1,518		11,171	,000					
	ROA	-,242	,205	-,126	-1,184	,239	-,164	-,105	-,104	,687	1,456
	ROE	-,070	,108	-,069	-,645	,520	-,139	-,058	-,057	,687	1,456
a. Dependent Variable: Dividen											

Source: SPSS Processed Data 19, 2021

From Table 4.9, it can be seen that there is no multicollinearity between independent variables in the regression model. This is indicated by the tolerance value of each variable > 0.10 and the VIF value < 10. The results of the multicollinearity test of equation 2 can be seen in the following table.

Table 10. Multicollinearity Test Results for Equation 2

Coefficients[a]											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2,413	1,111		2,171	,032					
	ROA	,042	,107	,043	,395	,694	,059	,035	,035	,679	1,472
	ROE	,007	,056	,013	,117	,907	,044	,010	,010	,685	1,461
	Policy Dividen	-,027	,046	-,053	-,582	,562	-,062	-,052	-,052	,970	1,031
a. Dependent Variable: Nilai Perusahaan											

Source: SPSS Processed Data 19, 2021

From Table 10 it can be seen that there is no multicollinearity between the independent variables in the regression model. This is indicated by the tolerance value of each variable > 0.10 and the VIF value < 10.

Autocorrelation Test

The autocorrelation test aims to test whether in a linear regression model there is a correlation between the nuisance error in period t and the error in period t-1 (previous). The results of the autocratic test of equation 1 can be seen in the following table.

Table 11. Autocorrelation Test Results Equation 1

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,174[a]	,030	,015	11,205	,922
a. Predictors: (Constant), ROE, ROA b. Dependent Variable: Dividen					

Source: SPSS Processed Data 19, 2021

Based on the test results in Table 11, it can be seen that the Durbin-Watson value is 0.922. By using the Durbin-Watson table, it can be seen that the value of DL = 1,309, the value of DU = 1,574, the value of 4 – DL = 2,389 and the value of 4 – DU = 2,426. DW < DL or 0.922 < 1.309 means that there is an autocorrelation, to make improvements using the Cochrane Orcutt method. The results of the autocorrelation test of equation 1 after the repair can be seen in the following table.

Table 12. Autocorrelation Test Results Equation 1 After Repair

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,203[a]	,041	,026	9,46490	2,165
a. Predictors: (Constant), Lag_X2, Lag_X1 b. Dependent Variable: Lag_Y1					

Source: SPSS Processed Data 19, 2021

Based on the test results in Table 12 after repair using the Cochrane Orcutt method, it can be seen that the Durbin-Watson value is 2.165. By using the Durbin-Watson table, it can be seen that the value of DL = 1.244, the value of DU = 1.650, the value of 4 – DL = 2.756. DU < DW < 4 - DL or 1,650 < 2,165 < 2,756, meaning that there is no autocorrelation. The results of the autocorrelation test of equation 2 can be seen in the following table.

Table 13. Autocorrelation Test Results Equation 2

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,080[a]	,006	-,018	5,80317	1,009
a. Predictors: (Constant), Kebijakan Dividen, ROE, ROA b. Dependent Variable: Nilai Perusahaan					

Source: SPSS Processed Data 19, 2021

Based on the test results in Table 13, it can be seen that the Durbin-Watson value is 1.009. By using the Durbin-Watson table, it can be seen that the value of DL = 1,309, the value of DU = 1,574, the value of 4 – DL = 2,389 and the value of 4 – DU = 2,426. DW < DL or 1.009 < 1.309 means that there is an autocorrelation, to make improvements using the Cochrane Orcutt method.

The results of the autocorrelation test of equation 2 after the repair can be seen in the following table.

Table 14. Results of Equation 2 Autocorrelation Test After Repair

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,485[a]	,235	,215	,087772	2,300
a. Predictors: (Constant), Lag_Y1, Lag_X2, Lag_X1 b. Dependent Variable: Lag_Y2					

Source: SPSS Processed Data 19, 2021

Based on the test results in Table 4.14 after repair using the Cochrane Orcutt method, it can be seen that the Durbin-Watson value is 2,300. By using the Durbin-Watson table, it can be seen that the value of DL = 1.244, the value of DU = 1.650, the value of 4 – DL = 2.756. DU < DW < 4 - DL or 1,650 < 2,300 < 2,756, meaning that there is no autocorrelation.

Heteroscedasticity Test

The results of the heteroscedasticity test of equation 1 can be seen in the following table.

Table 15. Heteroscedasticity Test Results Equation 1

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	8,568	,835		10,257	,000
	ROA	-,037	,113	-,035	-,327	,745
	ROE	,080	,059	,144	1,348	,180
a. Dependent Variable: Abs_RES1						

Source: SPSS Processed Data 19, 2021

Based on Table 15 shows the results of the heteroscedasticity test using the Glejser test that the value of sig. From ROA and ROE in detail can be explained as follows:

a. sig value. ROA is 0.745 > 0.05, meaning that there is no heteroscedasticity

b. sig value. The ROE is 0.180 > 0.05, meaning that there is no heteroscedasticity.

From the explanation above, it can be concluded that all variables do not occur heteroscedasticity, because the value of sig. of all these variables > 0.05. The results of the heteroscedasticity test of equation 2 can be seen in the following table.

Table 16. Heteroscedasticity Test Results Equation 2

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,903	1,039		2,794	,006
	ROA	-,054	,100	-,059	-,542	,589
	ROE	-,009	,052	-,018	-,168	,867
	Dividen	-,034	,043	-,072	-,794	,429
a. Dependent Variable: Abs_RES2						

Source: SPSS Processed Data 19, 2021

Based on Table 16 shows the results of the heteroscedasticity test using the Glejser test that the value of sig. From ROA, ROE and dividend policy in detail can be explained as follows.

a. sig value. for ROA is 0.589 > 0.05, meaning that there is no heteroscedasticity.

b. sig value. for ROE is 0.867 > 0.05, meaning that there is no heteroscedasticity.

c. sig value. for dividends is 0.429 > 0.05, meaning that there is no heteroscedasticity.

Linearity Test

The results of the linearity test of equation 1 can be seen in the following table:

Table 17. Linearity Test Results Equation 1

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,560[a]	,314	,291	9,40858278
a. Predictors: (Constant), ROA, ROE				

Source: SPSS Processed Data 19, 2021

From Table 17 above, it shows the R2 value of 0.314 with the value of n observations of 128, then the magnitude of the calculated c2 value = 128 x 0.314 = 40,192. This value is compared with table c2 with df = 66 and a significant level of 0.05, the value of c2 table is 155.405. c2 count < c2 table with a value of 40,192 < 155.405, it can be concluded that the data used is linear. The results of the linearity test of equation 2 can be seen in the following table:

Table 18. Linearity Test Results for Equation 2

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,157[a]	,025	-,016	5,84426844
a. Predictors: (Constant), ROA, ROE, Dividen				

Source: SPSS Processed Data 19, 2021

From Table 18 above, it shows the R2 value of 0.025 with a value of n observations of 128, then the magnitude of the calculated c2 value = 128 x 0.025 = 3.2. This value is compared with c2 table with df = 128 and a significant level of 0.05, it can be concluded that the value of c2 table is 155.405, c2 count < c2 table, with a value of 3.2 < 155.405, it can be concluded that the data used is linear.

Statistic test

Path Analysis

The results of path analysis equation 1 can be seen in the following table:

Table 19. Path Analysis Results Equation 1

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16,956	1,518		11,171	,000
	ROA	-,242	,205	-,126	-1,184	,239
	ROE	-,070	,108	-,069	-,645	,520
a. Dependent Variable: Dividen						

Source: SPSS Processed Data 19, 2021

From table 4.19 above can be known the equation of multiple linear regression as follows:

$$Y = 16{,}956 - 0{,}242X_1 - 0{,}070X_2$$

From the multiple regression equation, it can be explained as follows:

a. The constant value is 16.956 which states that if the ROA and ROE values are equal to 0 (zero) then the dividend value is 16.956.

b. The value of the ROA variable is -0.242, meaning that if there is an increase in the ROA variable by one unit, the value of the Dividend variable will increase by -0.242.

c. The value of the ROE variable is -0.070, if there is an increase in the ROE variable by one unit, the value of the Dividend variable will increase -0.070.

The results of path analysis equation 2 can be seen in the following table:

Table 20. Path Analysis Results Equation 2

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,413	1,111		2,171	,032
	ROA	,042	,107	,043	,395	,694
	ROE	,007	,056	,013	,117	,907
	Dividen	-,027	,046	-,053	-,582	,562
a. Dependent Variable: Nilai Perusahaan						

Source: SPSS Processed Data 19, 2021

From table 4.20 above can be known the equation of multiple linear regression as follows:

$$Y = 2{,}413 + 0{,}042X_1 + 0{,}007X_2 - 0{,}027\,Y$$

From the multiple regression equation, it can be explained as follows:

a. The constant value is 2.413 which states that if the value of ROA and ROE through dividends as an intervening variable is equal to 0 (zero), then the value of the Company Value variable is 2.413.

b. The value of the ROA variable is 0.042, meaning that if there is an increase in the ROA variable by one unit, the value of the Company Value variable will increase by 0.042.

c. The value of the ROE variable is 0.007, meaning that if there is an increase in the ROe variable by one unit, the value of the Firm Value variable will increase by 0.007.

Multiple Correlation Coefficient Analysis (R)

The results of the multiple correlation coefficient (R) equation 1 can be seen in the following table:

Table 21. Results of Multiple Correlation Coefficient Analysis (R) Equation 1

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,174[a]	,030	,015	11,20457
a. Predictors: (Constant), ROE, ROA				

Source: SPSS Processed Data 19, 2021

Based on the analysis of the multiple correlation coefficient (R) in Table 4.21, it can be seen that the value of the ROA and ROE variables on the dividend variable is 0.174. This means that the ROA and ROE variables have a very low relationship to the dividend policy variable. The results of the multiple correlation coefficient (R) equation 2 can be seen in the following table:

Table 22. Results of Multiple Correlation Coefficient Analysis (R) Equation 2

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,471[a]	,222	,211	17,89976
a. Predictors: (Constant), Dividen, ROE, ROA				

Source: SPSS Processed Data 19, 2021

Based on the results of the analysis of the multiple correlation coefficient (R) in Table 4.22, it can be seen that the value of the ROA and ROE variables through dividends as an intervening variable on the Firm Value variable is 0.471. This means that the ROA and ROE variables through dividends as intervening variables have a moderate level of relationship with the Firm Value variable.

Coefficient of Determination Analysis (R2)

The results of the analysis of the coefficient of determination (R2) equation 1 can be seen in the following figure:

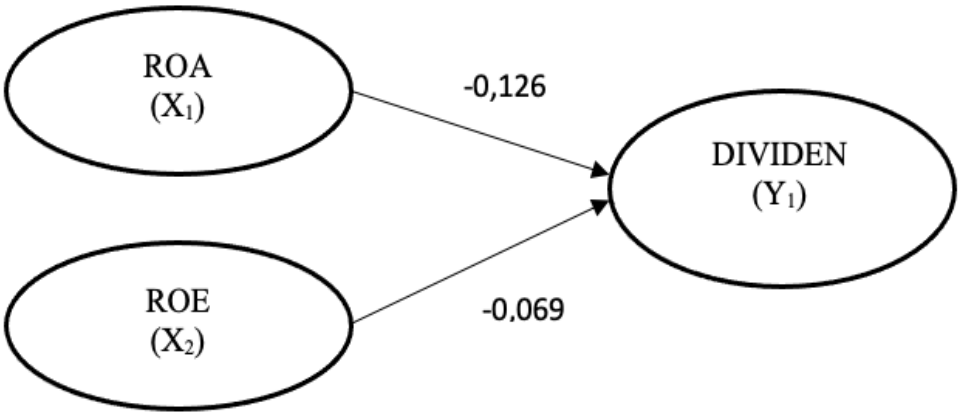
Tabel 23. Hasil Uji Koefisien Determinasi (R^2) Persamaan 1

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,174[a]	,030	,015	11,20457
a. Predictors: (Constant), ROE, ROA				

Source: SPSS Processed Data 19, 2021

Based on the results obtained in Table 4.23, the R square value of 0.030 means 3%. this shows that there is an effect on dividends that can be explained by the ROA and ROE variables of 3%, while the remaining 97% is explained by other variables that are not included in the research variables. Meanwhile, the value of e can be found with the formula e1=√(1-0.030)=0.97. The Standardized Coefficients Beta value is in Table 4.19, the ROA value is -0.126 and the ROE is -0.069. Thus, the path diagram of structural model 1 is obtained as follows:

Figure 4.1 Structural Model Path Diagram 1



The result of the coefficient of determination ($R^{2)}$equation 2 can be seen in the following table:

Table 24. Results of the Coefficient of Determination (R2) Equation 2

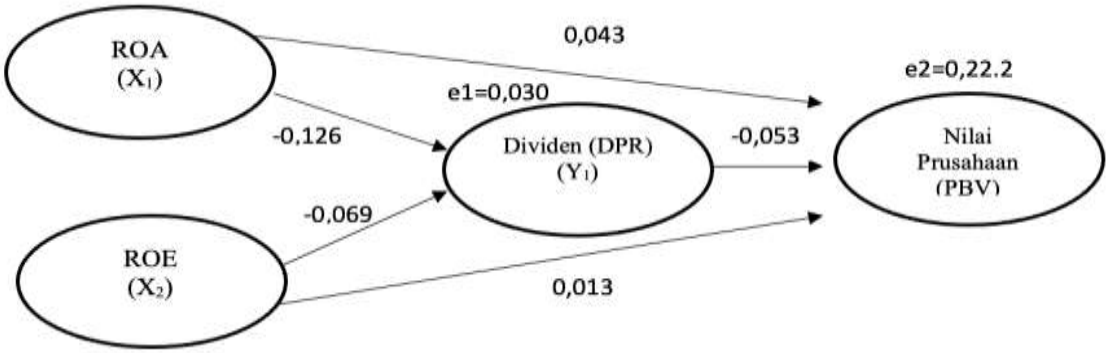
Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,471[a]	,222	,211	17,89976
a. Predictors: (Constant), Dividen, ROE, ROA				

Source: SPSS Processed Data 19, 2021

Based on the results obtained in Table 4.24 the value of R square is 0.222 or 22.2%. This shows that there is an influence on firm value which can be explained by the ROA, ROE and dividend variables of 22.2%. While the remaining 77.8% is explained by other variables that are not included in the research variables. Meanwhile, the value of e2 can be found using the formula

e2=(√1-0.22.2)=0.77.8. The Standardized Coefficients Beta value is in Table 4.20, the ROA value is 0.043, the ROE is 0.013 and the dividend is -0.053. Thus, the path diagram of the structural model 2 is obtained as follows:

Figure 2. Structural Model Path Diagram 2



Based on the path diagrams of structural models 1 and 2 above, it shows:

a. Analysis of the effect of ROA through dividends on firm value: It is known that the direct effect given by X1 to Y1 is -0.126, while the indirect effect of X1 through Y1 to Y2 is the multiplication of the Beta value of X1 to Y1 and the Beta value of Y1 to Y2, namely: -0.126 × - 0.053 = 0.006678. Then the total effect given by X1 to Y1 is the direct effect plus the indirect effect, namely: -0.126+0.006678= -0.119322.

Based on the calculation results above, it is known that the direct influence value is 0.043 and the indirect effect is 0.006678, which means that the indirect effect value is greater than the direct effect value, these results show that Y1 variable mediates the effect of X1 on Y2.

b. Analysis of the effect of ROE through dividends on firm value: It is known that the direct effect given by X2 on Y1 is 0.013, while the indirect effect of X2 through Y1 on Y2 is the multiplication between the Beta value of X2 against Y1 and the Beta value of Y1 on Y2, namely: 0.013 × -0.053 = 0.000689.

Based on the results of the above calculations, it is known that the direct influence value is 0.013 and the indirect effect is 0.000689, which means that the direct influence value is greater than the indirect effect value. This result shows that the Y1 variable does not mediate the influence of the X2 variable on the Y2 variable.

Simultaneous Effect Test (F Test)

Table 25. Simultaneous Effect Test Results (Test F) Equation 1

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	488,305	2	244,153	1,945	,147[a]
	Residual	15692,812	125	125,542		
	Total	16181,117	127			
a. Predictors: (Constant), ROE, ROA b. Dependent Variable: Dividen						

Source: Processed Data SPSS 19, 2021

Based on the results of the F test in Table 25, it states that the significant value for the effect of ROA, ROE simultaneously on dividends is 0.147 > 0.05. The results of the simultaneous test (F test) can be concluded that ROA, ROE simultaneously have no significant effect on dividends, which means that H0 is accepted, Ha is rejected.

The simultaneous test (F test) of equation 2 can be seen in the following table:

Tabel 26. Hasil Uji Pengaruh Simultan (Uji F) Persamaan 2

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24,133	3	8,044	3,816	,021[a]
	Residual	59,027	28	2,108		
	Total	83,160	31			
a. Predictors: (Constant), Dividen, ROE, ROA b. Dependent Variable: Nilai Perusahaan						

Source: Processed Data SPSS 19, 2021

Based on the results of the F test in Table 4.26, it states that the significant value for the effect of ROA, ROE through dividends as an intervening variable simultaneously on firm value is 0.021 <0.05. The results of the simultaneous test (F test) can be concluded that ROA, ROE through dividends as intervening variables simultaneously have a significant effect on firm value, which means H0 is rejected. Ha is accepted.

Partial effect test (t test)

The results of the partial test (t test) of equation 1 can be seen in the following table.

Table 27. Partial Effect Test Results (t-test) Equation 1

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16,956	1,518		11,171	,000
	ROA	-,242	,205	-,126	-1,184	,239
	ROE	-,070	,108	-,069	-,645	,520
a. Dependent Variable: Dividen						

Source: Processed Data SPSS 19, 2021

Based on Table 4.27, it can be seen that the influence of each independent variable, namely ROA, ROE on dividends is as follows:

a. The significant level of the ROA variable is 0.239 > 0.05. This means that the ROA variable partially does not have a significant effect on the Dividend variable, so H0 is accepted, Ha is rejected.

b. The significant level on the ROE variable is 0.520 > 0.05. That is, the ROE variable partially does not have a significant effect on the Dividend variable, then H0 is accepted, Ha is rejected.

The results of the partial test (T test) of equation 2 can be seen in the following table:

Table 28. Partial Effect Test Results (t-test) Equation 2

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,413	1,111		2,171	,032
	ROA	,042	,107	,043	,395	,694
	ROE	,007	,056	,013	,117	,907
	Policy Dividen	-,027	,046	-,053	-,582	,562
a. Dependent Variable: Nilai Perusahaan						

Source: Processed Data SPSS 19, 2021

Based on Table 4.28, it can be seen that the magnitude of the influence of each independent variable, namely ROA, ROE through dividends as an intervening variable on firm value is as follows:

The significant level on the ROA variable is 0.694 > 0.05. That is, the ROA variable through dividends as an intervening variable partially does not have a significant effect on the Firm Value variable, then H0 is accepted, Ha is rejected.

The significant level on the ROE variable is 0.907 > 0.05. That is, the ROE variable through dividends as an intervening variable partially does not have a significant effect on the Firm Value variable, then H0 is accepted, Ha is rejected.

Conclusion

The results of the study can be concluded as follows: (1) Based on the results of the multiple correlation coefficient (R) equation 1 the value obtained is 0.174. This means that the ROA and ROE variables have a low relationship to the Dividend variable. Multiple correlation coefficient test (R) equation 2 the value obtained is 0.471. This means that the ROA and ROE variables through dividends as intervening variables have a moderate level of relationship with the Firm Value variable. While the results of the coefficient of determination (R2) equation 1 states that the effect of ROA, ROE on dividends is 0.030 which means 3% while the remaining 97% is explained by other variables that are not included in the research variables. The results of the coefficient of determination (R2) equation 2 states that the effect of ROE, ROE through dividends as an intervening variable on firm value is 0.222 or 22.2%. While the remaining 77.8% is explained by other variables that are not included in the research variables. The results of the path analysis show that dividends mediate the ROA variable on firm value, while dividends do not mediate the effect of ROE on firm value; (2) Based on the results of the F test (simultaneous test) equation 1 states that ROA, ROE simultaneously have no significant effect on dividends in manufacturing companies in the basic and chemical industrial sectors listed on the BEI, with a value of 0.174 > 0.05. The results of the F test (simultaneous test) equation 2 states that ROA, ROE through dividends as intervening variables simultaneously have a significant effect on firm value in basic industrial and chemical manufacturing companies listed on the BEI, with a significant value of

0.021 > 0.05 ; (3) Based on the t test (Partial Effect Test) equation 1 states that the ROA, ROE variables partially have no significant effect on the dividend variable. equation 2 states that the variables ROA, ROE through dividends as intervening variables partially have no significant effect on the Firm Value variable.

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