Influence of Liquidity Ratio, Solvency Ratio, and Activity Ratio on Profitability Ratio

Evi Ratimah[1*], Basrowi[2], Rani Sri Sumarsih[3], Sujatna[4], Taufik Kemal[5], Ma'rup Azis[6], Abdul Wahib[7], Wan Hasniah[8], Suraya Saudi[9], and Lamuel Ventayen[10]

[1,2,3,4,5]Financial Management and Banking Study Program, Universitas Bina Bangsa, Indonesia
[6,7]Management Study Program, FEB Universitas Bina Bangsa, Indonesia
[8,9]Universiti Pertahanan Nasional Malaysia (UNPM), Kuala Lumpur, Malaysia
[10]Business Administration, Pangasinan State University, Philippines

Abstract – Manufacturing companies listed on the Indonesia Stock Exchange (IDX) are the most important contributors of information for investors, especially regarding information on financial ratios to financial performance. The purpose of this study is to determine the influence of liquidity ratio, solvency ratio, and activity ratio on the financial performance of companies (a case study on manufacturing companies in the chemical sub-sector listed on the Indonesia Stock Exchange (IDX) for the period 2019-2023). The quantitative method was used for this research. The population in this study consists of 17 companies in the chemical sub-sector listed on the Indonesia Stock Exchange (IDX), with a purposive sampling technique used to obtain 5 sample companies. Data was tested using IBM SPSS software version 25. The results of this study show that the results of the t-test (partial) on the Current Ratio (CR) with the t-> t_{table} calculation (3,878 > 1.66055) with a significance level (0.000 < 0.05), the Debt to Asset Ratio (DAR) with the t-table > calculation (2,217 < 1.66055) with the significance level (0.029 > 0.05) while the Total Asset Turnover (TATO) with the calculation of < t_{table} (1,355 < 1.66055) and its significance value (0.179 < 0.05) and obtained the results of the F test (simultaneous) that the Current Ratio (CR), Debt to Asset Ratio (DAR) and Total Asset Turnover (TATO) obtained the value of (5,587 > 2.47) and the significance value (0.001 < 0.05). The conclusions obtained show that the results of the t-test (partial) that Current Ratio (CR) and debt to Asset Ratio (DAR) have a positive and significant influence on Return on Asset (ROA) while Total Asset Turnover (TATO) partially does not affect Return on Asset (ROA). Simultaneously, the Current Ratio (CR), Debt to Asset Ratio (DAR), and Total Asset Turnover (TATO) affect the Return on Asset (ROA).

Keywords – Current Ratio (CR), Debt to Asset Ratio (DAR), Total Asset Turnover (TATO), Return on Asset (ROA)

INTRODUCTION

The way to see the financial performance of a company is its financial statements. The financial statements are used by investors as analytical materials in making investment decisions (Oktapiani & Kantari 2021). Financial ratios have an important role in analyzing the financial condition of a company. For the short term, the financial ratio is used to see the company's ability to pay dividends and for the long term, the financial ratio is used as a reference to analyze the condition of a company's financial performance (Oktapiani & Kantari 2021; Basrowi et al., 2020). Naufal and Fatihat (2023) classify financial ratios into four categories, namely liquidity ratio, solvency ratio, profitability ratio, and activity ratio.

Return On Asset (ROA) is used by management to determine the company's policies and strategies related to the company's development. Meanwhile, for investors and potential investors, Return On Asset (ROA) provides an overview of the return on investment invested in the company. Law Number 5 of 1984 concerning industry is an economic activity that processes raw materials, raw materials, semi-finished goods, or finished goods into goods with a higher value for their use, including industrial design and engineering activities.

In the 2019–2023 period, financial data from chemical sub-sector manufacturing companies listed on

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the Indonesia Stock Exchange (IDX) showed fluctuations in important indicators such as Return on Asset (ROA), Current Ratio (CR), Debt to Asset Ratio (DAR), and Total Asset Turnover (TATO). Return on Asset (ROA) shows a significant downward trend in various companies, including Aneka Gas Industri Tbk (AGII) and Ekadharma Internasional Tbk (EKAD), with ROA values fluctuating throughout those years. This decrease in ROA was also seen in other companies such as Intan Wijaya Internasional Tbk (INCI) and Barito Pacific Tbk (BRPT).

Data on the Current Ratio (CR) also indicates fluctuations, with several companies such as Emdeki Utama Tbk (MDKI) experiencing a significant decline in CR from 2021 to 2022. The graph depicting the change in CR shows that although there is a decline in some companies, the overall CR shows varying values, illustrating the liquidity dynamics of the companies in the sector.

Debt to Asset Ratio (DAR) shows an increase in several companies, including Ekadharma Internasional Tbk (EKAD) and Intan Wijaya Internasional Tbk (INCI), with an increasing trend seen from year to year. Meanwhile, Total Asset Turnover (TATO) decreased in several companies such as EKAD and BRPT. This analysis shows that these financial values fluctuated during the 2019-2023 period, which prompted the authors to explore more deeply the effect of CR, DAR, and tattoos on ROA in companies in the chemical sector listed on the IDX.

MATERIALS AND METHODS

This study uses a causal associative method with a quantitative approach to analyze the relationship between the Return on Asset (ROA) variable as a dependent variable and Current Ratio (CR), Debt to Asset Ratio (DAR), and Total Asset Turnover (TATO) as independent variables. The secondary data used was obtained from the annual financial statements of chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2019-2023 period. The sample was taken using a purposive sampling technique, which selected five companies that met certain criteria, including the availability of complete financial statements and consistent data over a specified period. Data collection techniques include literature studies and documentation from sources such as IDX and IDNFinancials websites.

Data analysis was carried out through descriptive statistics to describe the collected data, as well as classical assumption tests which included normality, multicollinearity, heteroscedasticity, and autocorrelation tests. The normality test evaluates the distribution of data using Kolmogorov-Smirnov statistics and distribution graphs, while the multicollinearity test checks the intercorrelation between independent variables using Variance Inflation Factor (VIF) and Tolerance values. The heteroscedasticity test was performed to ensure the absence of different residual variances between observation periods. This analysis was conducted using SPSS version 25 software to ensure the validity and consistency of the regression model.

RESULTS AND DISCUSSION
Return On Asset (ROA)
Table 1. Data *Return On Asset* (ROA)

YEAR	QUARTERLY	IN %				
		AGII	BRPT	PEARL	EKAD	MDKI
2019	I	0.45	0.53	0.54	3.37	0.82
	II	0.66	0.97	1.11	4.85	1.52
	III	1.1	1.33	2.37	8.53	3.35
	IV	1.47	1.91	3.41	7.99	3.56
2020	I	0.28	0.20	3.45	3.05	0.51
	II	0.25	0.34	4.39	4.86	1.54
	III	0.45	1.04	7.14	7.21	3.31
	IV	1.40	1.84	6.76	8.87	4.12
2021	I	0.67	1.52	0.60	2.84	0.56
	II	1.28	3.10	0.23	4.98	1.3
	III	2.22	3.06	0.47	7.35	2.37
	IV	2.59	3.20	2.16	9.31	3.94
2022	I	0.57	0.33	1.61	2.5	0.6
	II	0.66	0.33	3.04	3.97	1.16
	III	0.94	0.42	4.41	5.79	2.1
	IV	1.29	0.35	4.94	6.39	3.67
2023	I	0.54	0.59	0.14	1.84	1.25
	II	0.89	0.87	0.49	2.89	2.25
	III	1.48	1.02	3.05	4.69	3.43
	IV	2.17	0.98	3.55	594	4.55

Source: www.idx.co.id (data reprocessed by researchers).

The average Return On Asset (ROA) value of five manufacturing companies in the chemical sub-sector listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period, shows that the average value of the Return On Asset (ROA) value fluctuates every year. The highest average Return On Asset (ROA) value occurred in 2021 Quarter IV by PT. Eka Dharma Internasional Tbk (EKAD) by 9.13%, while the lowest average value of Return On Asset (ROA) in the first quarter of 2023 by PT. Intanwijaya Internasional Tbk by 0.14%.

1. Current Ratio (CR)
   Table 2. Current Ratio (CR)

		IN %

YEAR	QUARTERLY	AGII	BRPT	PEARL	EKAD	MDKI
2019	I	144.42	211.60	372.86	543.75	769.9
	II	129.25	219.33	407.7	703.23	416.33
	III	113.92	216.56	323.04	694.71	562.49
	IV	87.48	165.35	362.28	691.7	705.08
2020	I	103.55	211.60	306.99	723.68	649.06
	II	101.46	219.33	352.14	1160.61	647.57
	III	111.92	216.56	393.69	715.41	915.82
	IV	100.92	165.35	371.75	810.50	928.27
2021	I	79.94	213.60	326.69	779.17	799.72
	II	75.18	224.64	279.98	779.59	616.91
	III	95.10	354.43	251.87	715.33	650.28
	IV	103.25	314.64	251.10	775.81	785.94
2022	I	105.62	490.80	269.95	1101.71	611.52
	II	120.69	497.67	277	1028.18	376.64
	III	116.67	441.04	318.22	1087.28	470.8
	IV	116.67	369.64	378.75	1175.56	538.06
2023	I	118.92	482.21	489.21	1265.61	557.57
	II	116.28	500.57	580.44	931.8	501.9
	III	100.18	446.30	546.85	1224.28	658.15
	IV	173.34	318.67	564.18	1420.69	615.2

Source: www.idx.co.id (data reprocessed by researchers).

2. Debt to Asset Ratio (DAR)
Table 3. Data *Debt to Asset Ratio* (DAR)

YEAR	TRIWULAN	IN %				
		AGII	BRPT	PEARL	EKAD	MDKI
2019	I	53.75	60.11	14.76	14.32	8.76
	II	53.6	60.83	13.68	12.21	12.49
	III	53.82	60.00	17.62	12.11	10.26
	IV	53	61.63	16.11	11.95	9.68
2020	I	53.82	61.69	19.31	11.55	10
	II	53.54	59.26	17.15	8.72	9.94
	III	53.33	59.08	15.64	11.55	8.45
	IV	52.52	61.59	17.08	11.98	8.6
2021	I	55.42	59.24	19.49	12.25	9.16
	II	54.90	59.23	22.82	12.01	10.39
	III	55.89	52.09	25.35	12.90	1.01
	IV	56.12	53.83	25.68	11.60	8.13
2022	I	54.36	53.43	24.07	9.43	9.22
	II	55.38	52.55	23.68	9.74	12.99
	III	55.04	52.51	20.64	9.4	10.75
	IV	54.04	59.76	15.94	8.88	10.11
2023	I	52.32	59.40	12.42	8.43	10.22
	II	51.12	59.40	10.64	9.98	10.93
	III	50.48	60.01	11.48	7.8	9.21
	IV	52.19	59.49	11.36	7.98	9.36

Source: www.idx.co.id (data reprocessed by researchers).

Grade point average Debt to Asset Ratio (DAR) in five chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period, showing that the average value of Debt to Asset Ratio (DAR) fluctuates every year. Average grade Debt to Asset Ratio (DAR) in the first quarter of 2020 by PT. Barito Pacific Tbk (BRPT) by 61.69% while the average value Debt to Asset Ratio (DAR) was the lowest in the third quarter of 2021 by PT Emdeki Utama Tbk at 1.01%.

Data Analytics Requirements Testing
1. Descriptive Statistical Test
Table 4. Descriptive Statistical Test Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CR	100	75	1421	470.25	315.831
BUT	100	1	62	29.99	21.771
THIS	100	7	102	31.87	21.625
ROA	100	2	594	8.40	59.192
Valid N (listwise)	100				

Source : IBM SPSS version 25 Ouput data (processed data, 2024)

Based on Table 23 in the descriptive statistical test, it can be seen that there is a total of 100 data with the following variables:

1. ROA shows a minimum value of 2 and a maximum value of 594, a mean value of Return On Asset (ROA) of 8.40, and a standard deviation of 59.192.
2. The Current Ratio shows a minimum value of 75 and a maximum value of 1421, a mean value of 470.25, and a standard deviation of 315.831.
3. The Debt to debt-to-asset ratio has a minimum value of 1 and a maximum value of 62, the mean value of the Debt to Asset Ratio is 29.99 and the standard deviation is 27.771.
4. Total Asset Turnover has a minimum value of 7 and a maximum value of 102, the average value of the Total
5. Classical Assumption Test
   1) Normality Test
a) Statistical Test
   Table5. Fire Brigade Uji Kolmogrov-Smirnov

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		100
Normal Parameters,b	Mean	.0000000
	Std. Deviation	428.89038779
Most Extreme Differences	Absolute	.127
	Positive	.127
	Negative	-.079
Test Statistic		.127
Asymp. Sig. (2-tailed)		.153c
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: IBM SPSS version 25 Output Data (processed data, 2024)

The results of data processing in Table 24 above, it show the value of *Asymp.Sig. (2-tailed)* is 0.153 and the value is more than the significance value of 0.05 or 5%, then it can be concluded that the value is normally distributed.

b) Test the Graph
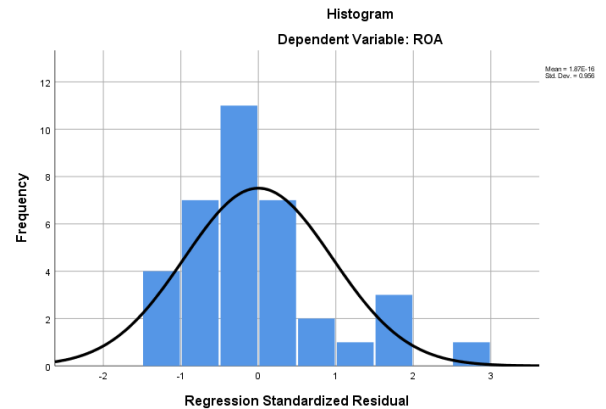
Fig, 1 Normality Histogram Chart
Source: IBM SPSS version 25 Output Data (processed data, 2024)

From the results of Figure 6 of the normality test histogram curve above, the curve is normally distributed, the histogram line is shaped like a bell *(bell-shaped curved)* which widens on both sides so that it can be said that the residual data is normally distributed.
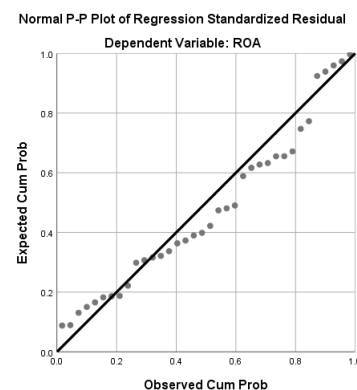

Fig. 2. P-Plot Normality Test
Source: IBM SPSS version 25 Output Data (processed data, 2024)

Based on figure 7 above, it shows the dots spreading around the diagonal line and following the direction of the diagonal line. So, it can be concluded that the data in this study is normally distributed. Both graphs show that the regression model meets the assumption of normality.

2. Multicoloniality Test

Table 6. Multicollinearity Test Results

Coefficients[a]					
	Correlations			Collinearity Statistics	
Model	Zero-order	Partial	Part	Tolerance	BRIGHT
1 CR	-.132	-.069	-.065	.928	1.078
BUT	-.301	-.300	-.295	.989	1.012
THIS	-.156	-.147	-.139	.937	1.067
a. Dependent Variable: ROA					

Source: IBM SPSS version 25 Output Data (processed data, 2024)

Based on table 25 above, shows the tolerance value of the Current Ratio variable of 0.928, Debt to-asset ratio of 0.989, and Total Asset Turnover of 0.937. From the calculation of the tolerance value, it shows that there is no independent variable that has a tolerance value < 0.10.

The VIF value of the Current Ratio variable is 1,078, the Debt to Asset Ratio is 1,012 and the Total Asset Turnover is 1,067, from the calculation of the VIF value shows that there is no independent variable that has a VIF value < 10. Thus, it can be concluded that there is no multicoloniality between independent variables.
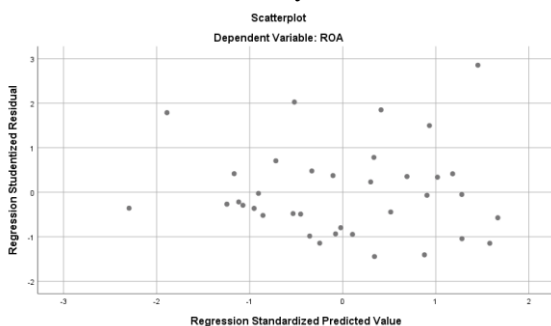
3. Heteroscedasticity Test

Fig. 3. Heteroscedasticity Test Results
Source: IBM SPSS version 25 Output Data
(processed data, 2024)

Based on Figure 8, it can be seen that the dots are spread randomly, do not form a certain clear pattern, and are spread above or below zero (0) on the Y-axis, so it can be concluded that the regression model does not occur heteroscedasticity.

4. Autocorrelation Test

A good regression equation can have autocorrelation problems, if autocorrelation occurs then the equation becomes not good for prediction. One of the measures in determining the existence of an autocorrelation problem is the Durbin-Watson (DW) test. With the following conditions:

1. A positive autocorrelation occurs if the DW is below -2 (DW < -2).
2. Negative autocorrelation occurs if DW is above +2 (DW > +2)
3. No autocorrelation occurs, if DW is between -2 and +2 (-2 DW +2)

Table 7. Autocorrelation Test Results

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.347a	.120	.038	448.54430	1.528
a. Predictors: (Constant), TATO, DAR, CR					
b. Dependent Variable: ROA					

Source: IBM SPSS version 25 Output Data (processed data, 2024)

Based on Table 26 above, it can be seen that the results of the output calculation in Table 4.8 above can be seen that the results of the autocorrelation test on the *Durbin-Watson* (DW) value are 1.528. The resulting values are between the numbers -2 and +2, so it can be concluded that the regression model used does not autocorrelate.

5. Multiple Regression Analysis

Table 8. Multiple Linear Regression Analysis Test Results

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Mr.
1	(Constant)	-81.436	29.113		-2.797	.006
	CR	.105	.027	.561	3.878	.000
	BUT	.932	.420	.343	2.217	.029
	THIS	.390	.288	.142	1.355	.179
a. Dependent Variable: ROA						

Source: IBM SPSS version 25 Output Data (processed data, 2024)

The results of the output calculation in Table 27 above, the regression equation model can be obtained as follows:

$$Y = a + b1X1 + b2X2 + b3X3$$
$$Y = -81.436 + 0.105X1 + 0.932X2 + 0.390X3$$

From the results of the multiple linear regression analysis, it can be formulated into the regression equation as follows:

a) The constant value is -81,436 which means that assuming that if the variables Current Ratio (X1), Debt to Asset Ratio (X2), and Total Asset Turnover (X3) are 0 (zero), then the magnitude of the Return On Asset (Y) value is – 81,436.

b) The value of the regression coefficient in the Current Ratio variable (X1) is 0.150, meaning that every time there is an increase in the Current Ratio (X_1) variable by 1%, then the Return On Asset (Y) increases by 0.150 (15%) or vice versa, every time there is a decrease in the Current Ratio (X_1) variable by 1%, the Return on Asset (Y) decreases by 0.150 (15%).

c) The value of the regression coefficient in the Debt to Asset Ratio (X2) variable is 0.932, meaning that every time there is an increase in the Debt to Asset Ratio (X_2) variable by 1%, the Return on Asset (Y) increases by 0.932 (93.2%) or vice versa, every time there is a decrease in the Debt to Asset Ratio (X_2) variable by 1%, the Return On Asset (Y) decreases by 0.932 (93.2%).

d) The regression coefficient value in the Total Asset Turnover (X3) variable is 0.390, meaning that every time there is an increase in the Total Asset Turnover (X_3) variable by 1%, the Return On Asset (Y) increases by 0.390 (39%) or vice versa, every decrease in the Total Asset Turnover (X_3) variable decreases by 0.390 (39%).

6. Correlation Coefficient Test
   Table 9. Correlation Coefficient Test Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.347a	.120	.038	448.54430
a. Predictors: (Constant), TATO, DAR, CR				

Source: IBM SPSS version 25 Output Data (processed data, 2024)

The magnitude of the relationship between Current Ratio (X1), Debt to Asset Ratio (X2) and Total Asset Turnover (X3) to Return On Asset (Y) calculated with a correlation coefficient R of 0.347 is in the interval of coefficient 0.400-0.559 which means that there is a moderate relationship between *Current Ratio* (X1), *Debt to Asset Ratio* (X2) and *Total Asset Turnover* (X3) to *Return On Asset* (Y).

7. Coefficient of Determination
   Table 10.Results of the Determination Coefficient Test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.347a	.120	.038	448.54430
a. Predictors: (Constant), TATO, DAR, CR				

Source: IBM SPSS version 25 Ouput data (processed data, 2024)

The value of R Square (R2) is 0.120. To find out the magnitude of the variables Current Ratio (X1), Debt to Asset Ratio (X2), and Total Asset Turnover (X3) to Return On Asset (Y), the calculation is in the following formula:

$$
\begin{aligned}
KD &= R2 \times 100\% \\
&= 0.3472 \times 100\% \\
&= 0.120 \times 100\% \\
&= 34.7\%
\end{aligned}
$$

Based on the calculation above, the value of R Square or R^2 is obtained with a value of 34.7%. This shows that the influence of independent variables, namely *Current* Ratio (X1), *Debt to Asset* Ratio (X2), and *Total Asset Turnover* (X3) on the dependent variable *Return On Asset* (Y) is 34.7%, while the remaining 65.3% is influenced by other variables outside of this study.

8. Hypothesis Testing
   c) 4.3.1 Partial test (t-test)
      Table 11. Partial Test Results (t-Test)

Coefficientsa						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Mr.
1	(Constant)	-81.436	29.113		-2.797	.006
	CR	.105	.027	.561	3.878	.000
	BUT	.932	.420	.343	2.217	.029
	THIS	.390	.288	.142	1.355	.179
a. Dependent Variable: ROA						

Source: IBM SPSS version 25 Ouput data (processed data, 2024)

Calculation of the t-value of the table with the criterion of significance value 0.05 and degree of freedom (dk) = n - k, where n is the number of samples and k is the number of independent variables, then 100 – 2 = 98 is obtained, the t-value of the table is obtained of 1.66055, then the influence of each independent variable on the bound variable can be concluded as follows:

Current Ratio (CR) to Return On Assets (ROA)

The t-value calculated on the Current Ratio (CR) variable is 3.878 and the t-value of the table is 1.66055, then the t-value $_{calculated}$ >$_{t-table}$ (3.878 > 1.66055) and the significance value (0.000 < 0.05), then Ho is rejected and Ha is accepted, so it can be concluded that the Current Ratio (CR) has a positive and significant influence on the jtReturn On Asset (ROA) in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period. To find out the effect, you can see the following curve:
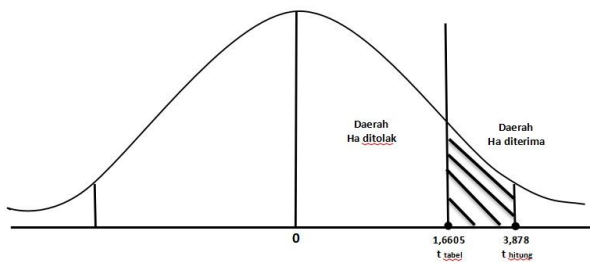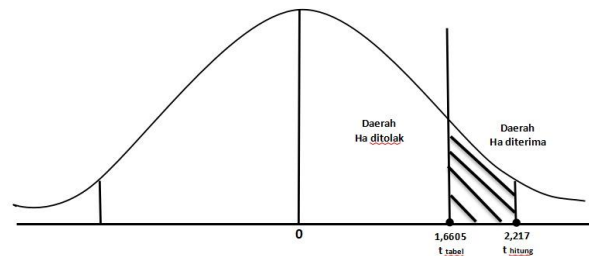

Fig. 4. Test Curve Test Result Area t

Debt to Asset Ratio (DAR) to Return On Assets (ROA)

The t-value calculated on the *Debt to Asset Ratio* (DAR) variable is 2.217 and the t-value of the table is 1.66055, then the t-value calculated> t$_{table}$ (2.217 >

1.66055) and the significance value (0.029 < 0.05), then Ho is rejected and Ha is accepted, so it can be concluded that the Debt to Asset Ratio (DAR) has a positive and significant influence in Return on Asset (ROA) in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period. To find out the effect, you can see the following curve:

Fig. 5 1 Test Curve Test Result Area t

Total Asset Turnover (TATO) to Return On Assets (ROA)

The t-value calculated on the Total Asset Turnover (TATO) variable is 1.355 and the t-value of the table is 1.66055, then the t-value calculated < t$_{table}$ (1.355 < 1.66055) and the significance value (0.179 > 0.05), then Ho is accepted and Ha is rejected, so it can be concluded that *Total Asset Turnover (TATO)* has no positive influence on Return *On Asset* (ROA) in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period. To find out the effect, you can see the following curve:
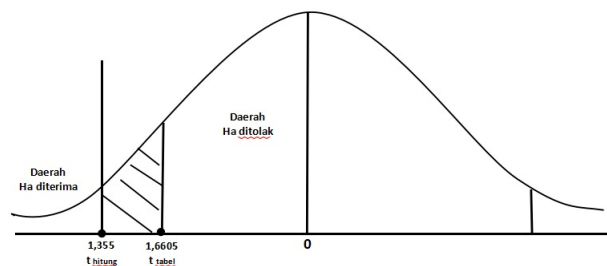

Fig. 6. Test Curve Test Result Area t *Total Asset Turnover* (TATO) against *Return On Asset* (ROA).

9. Simultaneous Test (Test F)

Table 12.Simultaneous Test Results (Test F)
ANOVA

Model		Sum of Squares	df	Mean Square	F	Mr.
1	Regression	51557.539	3	17185.846	5.587	.001b
	Residual	295302.244	96	3076.065		
	Total	346859.783	99			

a. Dependent Variable: ROA
b. Predictors: (Constant), TATO, CR, DAR
Source: IBM SPSS version 25 Output Data (processed data, 2024)

The confidence level is 95% (= 0.05), the value of free degrees (df1 = k - 1) (4 - 1 = 3) and (df2 = n - k) (100 - 4 = 96), then the F value $_{of\ the\ table}$ is 2.47 and the F value is calculated as 5.587, then the results obtained F are calculated > F_{table} (5.587 > 2.47) and the significance value (0.001 < 0.05), Ho is rejected and Ha is accepted so that it can be concluded that the Current Ratio (CR), Debt to Asset Ratio (DAR) and Total Asset Turnover (X3) together (simultaneously) have an effect on Return On Asset (ROA) in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period. The following is a picture of the Ho acceptance and rejection area curve, namely:
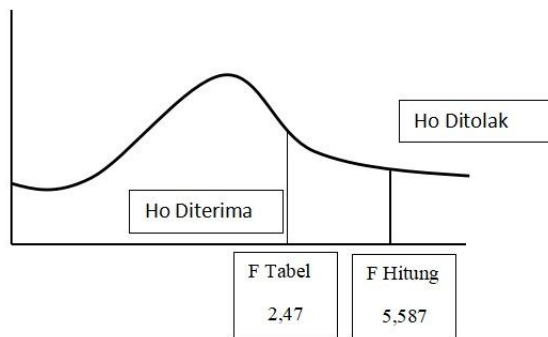

Figure 7. Test Curve Test Result Area F

Research Discussion
The Influence of Current Ratio (CR) on Return on Assets (ROA)

Based on the results of data processing using IBM SPSS version 25, the results of the partial test (t-test) were obtained by calculating the Current Ratio (CR) of 3.878 and the t-value of the table of 1.66055, showing that the t-count value of the t-table > (3.878 > 1.66055) and the significance value (0.00 < 0.05), then it can be concluded that Ho is rejected and Ha is accepted, which means that there is a positive influence between the Current Ratio (CR) against Return On Asset (ROA). Thus, the first hypothesis states that there is an effect of Current Ratio (CR) on Return On Asset (ROA) in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period.

This shows a high Current Ratio (CR), then the company can be said to be a liquid company, on the other hand, if the company does not have to pay off its short-term obligations at the time of the term, then the company is said to be an illiquid company.

The results of this study are in line with the results of previous research conducted by Devi Ariani, Bati (2019) stated that the Current Ratio (CR) partially has a positive and significant influence on Return On Asset (ROA).

The Influence of Debt to Asset Ratio (DAR) on Return on Assets (ROA)

Based on the results of data processing using IBM SPSS version 25, the results of the partial test (t-test) were obtained by calculating the Debt debt-to-asset ratio (DAR) of 2,217 with a t_{table} value of 1.66055, showing that the t_{table} > t_{table} (2,217 > 1.66055) and significance value (0.029 < 0.05), then it can be concluded that Ho was rejected and Ha was accepted, which means that there is a positive influence between Debt to Asset Ratio (DAR) on Return On Asset (ROA). Thus, the second hypothesis states that there is an effect of Debt to Asset Ratio (DAR) on Return On Asset (ROA) in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period.

This shows that the lower the value of the Debt to debt-assets ratio (DAR), the better the company's ability to pay all its long-term obligations will be. After all, a low Debt-debt-assets ratio (DAR) value, it reflects the company is managing its debt well, if the higher the value of the Debt to Assets Ratio (DAR), the less good Because there is an increase in risk faced by creditors in the form of the company's inability to pay all its obligations.

The results of this study are in line with the results of several previous studies conducted by Sri Wellis

Anggraeni, R. Nasution (2022) stated that Debt to Asset Ratio (DAR) partially influences Return On Asset (ROA).

The Influence of Total Asset Turnover (TATO) on Return on Asset (ROA)

Based on the results of data processing using IBM SPSS version 25, the results of the partial test (t-test) were obtained by calculating the Total Asset Turnover (TATO) of 1,355 and the t_{table} value of 1.66055, indicating that the $t_{table} < t_{table}$ (1,355 < 1.66055) and significance value (0.179 > 0.05), it can be concluded that Ho was accepted and Ha was rejected, which means that there is no significant influence between Total Asset Turnover (TATO) on Return On Asset (ROA). Thus, the second hypothesis states that there is no effect of Total Asset Turnover (TATO) on Return On Asset (ROA) in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period.

This shows that the lower the Total Asset Turnover (TATO) value, the company's ability to generate sales based on the assets it owns is also less, the lower Total Asset Turnover (TATO) value reflects the company's ability to manage assets well, if the lower the Total Asset Turnover (TATO) value, the less it is, because of the company's inability to maximize its assets. Several previous studies conducted Total Asset Turnover (TATO) partially does not affect Return on Asset (ROA).

The Influence of Current Ratio (CR), Debt to debt-to-asset ratio (DAR), and Total Asset Turnover (TATO) on Return on Assets (ROA)

Based on the results of data processing using IBM SPSS version 25, the results of the simultaneous test (Test F) were obtained with an Fcal of 5.587 while the Ftabel was obtained of 2.47. It can be concluded that Fcalung > Ftable (5,587 > 2.47) with a significance level (0.001 < 0.05), then Ho is rejected and Ha is accepted, so it can be concluded that the Current Ratio (CR) and Debt to Asset Ratio (DAR) together (simultaneously) have a significant effect on Return On Asset (ROA) in manufacturing companies in the chemical sub-sector listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period.

This shows that the higher the Return On Asset (ROA) value, the higher the net profit generated from funds embedded in total assets so it can show that the company's performance is getting better.

The results of this study are in line with the results of previous research conducted by Syifa Nurfianti, Retno Wulansari (2023) that together (simultaneously) Current Ratio (CR) and Debt to Asset Ratio (DAR) have a significant effect on Return on Asset (ROA).

CONCLUSION AND RECOMMENDATION

Based on the results of the research and discussion that has been presented previously, conclusions can be drawn from the research regarding the influence of liquidity ratio, solvency ratio, and activity ratio on profitability ratio in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period with a sample of 5 (five) companies as follows:

1. The t_{count} value (partial) of the Current Ratio variable was obtained as 3.878 and the t_{table} value was 1.66055, indicating that the t_{count} value > t_{table} (3.878 > 1.66055) and significance value (0.000 < 0.05), then it can be concluded that Ho was rejected and Ha was accepted, which means that there is a positive and significant influence between the Current Ratio on Return On Asset in manufacturing companies in the chemical sub-sector listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period.

2. The variable (partial) t_{count} value of the Debt to Asset Ratio was obtained as 2,217 t_{table} value of 1.66055, indicating that the t-t-> value of the table (2,217 > 1.66055) and significance value (0.029 < 0.05), it can be concluded that Ho was rejected and Ha was accepted, which means that there is a positive and significant influence between the Debt to Asset Ratio on Return On Asset in manufacturing companies in the chemical sub-sector listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period.

3. The arrival value of Total Asset Turnover (TATO) was obtained as 1,355 with a t_{table} value of 1.66055, indicating that the t_{count} value < t_{table} (1,355 < 1.66055) and significance value (0179 > 0.05), then it can be concluded that Ho was accepted and Ha was rejected, which means that there is no influence between Total Asset Turnover (TATO) on Return On Asset in chemical sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period.

4. Based on the results of the simultaneous tester (test F) obtained with a Fcal of 5.587 while Ftabel obtained of 2.47, it can be concluded that Fcal > Ftabel (5.587 > 2.47) with a significance level (0.001 < 0.05), then Ho is rejected and Ha is accepted, so it can be

concluded that the Current Ratio, Debt to Asset Ratio and Total Asset Turnover together (simultaneous) have an effect and are significant on Return On Asset in manufacturing companies in the chemical sub-sector that listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period.

Based on the conclusions and implications above, several suggestions can be put forward that are expected and can be useful for related companies and for other parties. The suggestions given include:

1. For the management of the company, it is recommended to get a lot of capital and manage it well to improve the company more advanced, well-managed capital will generate increased profits, which can help the company pay off its obligations and can add value to the company's existence in the eyes of investors and the public.
2. investors or potential investors who will invest their investments, can analyze the company's financial statements before investing their investments.
3. For the next researcher, it is better to add independent variables that are still related to financial statements in addition to the variables used in this study while still based on this research while still being based on previous relevant studies.
4. For subsequent researchers, it is hoped that they can expand the scope of research by extending or adding to the research period

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