The Driver of The Increase in Cash Holding in the Basic Chemical Industry

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Abstract. Cash availability is a critical component of business development for manufacturing enterprises operating in the basic and chemical industries considering that the company's cash is its most liquid asset, is used to finance the needs in operational activities in order to expand, invest, and also pay. As a result, the business needs to manage its finances well to ensure that it has enough cash on hand to meet its needs without going overboard. Determining the impact of Earning Per Share, Current Ratio, and Debt to Asset Ratio on Cash Holding was the goal of this study. Thiskind of study is done using numbers. Multiple linear regression analysis is used in this study design. This study's sampling strategy uses purposive sampling method. The outcomes of this study examination Cash holding is significantly impacted by both the current ratio and earnings per share. On the other hand, cash holding is mostly unaffected by the debt to asset ratio. Every independent variable influences the dependent variable concurrently.

Keywords: Debt Asset Ratio, Current Ratio, Earning Per Share, Cash Holding

1 Introduction

In the business development sector, manufacturing enterprises in the basic and chemical industries, theavailability of cash is essential to the operation of the business because it is the most liquid asset of the organization and is used to finance demands like expansion, investments, and payments. Basic industrial and chemical firms use cash on hand as a means of funding investment and other commitments in an effortto keep rising costs of corporate

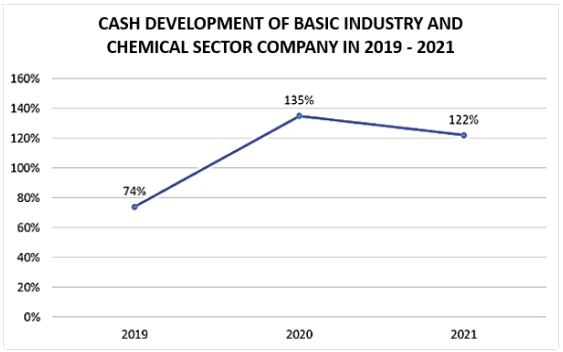

Fig. 1. Cash Development of Basic Industry and Chemical Sector Companies

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As is well known that the graph in 2019-2021 the development of company cash in manufacturing companies in the basic and chemical industry sectors listed on The Indonesia Stock Exchange has had upsand downs, or you could say that the situation is unclear. The cash development of manufacturing companies in the basic and chemical industry sectors in 2019 amounted to 74%. In 2020 it increased by 61% to 135%, while in 2021 it decreased by 13% to 122%. Based on the diagram above, manufacturing companies in the basic and chemical industry sectors have experienced cash fluctuations or ups and downsfor a number of years. The more volatile a company's cash, the more likely it is that the company will experience cash shortages in the future [2].

In determining Cash Holding, there are factors that influence its determination, namely Debt to Asset Ratio. [8] concluded that Cash Holding has a negative effect on Debt to Asset Ratio because this demonstrates that a corporation's cash holdings decrease with increasing debt-to-asset ratio, ifa company can readily secure funding from debt, it may maintain low cash holdings.

One of the factors that influence the determination of the next Cash Holding is Current Ratio. Then Simanjuntak & Sri Wahyudi (2017) They stated that because businesses with higher sales will have more opportunities to store cash more effectively, current ratios have a beneficial impact on cash holding.

Earnings Per Share is a significant determinant of Cash Holding. The Research conducted by [11] and [13] Earning Per Share has a significant effect on CashHolding because it shows that companies with a high level of Earning Per Share will have a tendency to hold large amounts of cash.

Realizing the existence of multiple distinct findings from earlier studies. There are numerous manufacturing firms in Indonesia's basic and chemical industries that still struggle with cash and asset management, and there are also instances of manufacturing firms liquidating their assets to settle debts. There is a case study of the company PT Solusi Bangun Indonesia Tbk (SMCB), a subsidiary of PT SemenIndonesia (Persero) Tbk (SMGR) in 2019 divesting the company's unproductive land assets to pay debts and also because the company's cash is not enough to cover weak operational performance. [10] Based on the explanation, This study aims to examine the impact of Earnings Per Share, Current Ratio, andDebt Asset Ratio on Cash Holding in Basic Industry and Chemical Sector Manufacturing Companies Listed on the Indonesia Stock Exchange in 2019-2021.

2 Literature Review and Hypothesis Development

2.1 Pecking Order Theory

As stated by Ghozali (2020) The sequence of funding sources used for determining business funding isexplained by the Pecking Order Theory. According to this principle, businesses should use internal cash tofinance investments before requesting outside funding.

2.2 Cash Holding

Cash Holding is kept cash from income that is readily convertible into cash for use now or in the future.Cash holdings are also used to finance investments, cover unforeseen costs, support business operations, and fulfill other short-term responsibilities. [5]

2.3 Debt to Asset Ratio

Debt to Asset Ratio is useful for showing the quality of a company's liabilities and how much the ratio between liabilities and assets owned by the company is [3]. So, Debt to Asset Ratio a ratio is a way to quantify how much debt a business has that finances or acquires both sources of funding and assets. According to [4] the formula for Debt to Asset Ratio.

2.4 Current Ratio

According to [6] Current Ratio is used to assess a company's capacity to settle its short- term debts the higher the Current Ratio, the more current assets are being utilized to settle the company's short-term debts. As stated by [4] from the Current Ratio.

2.5 Earning Per Share

According to [1] The ratio of net profit after taxes to the total number of outstanding shares is known as Earnings Per Share. A company's earnings per share information indicates how much net profit it will give to its shareholders. According to [4] the formula used to calculate Earning Per Share.

Analysis Model

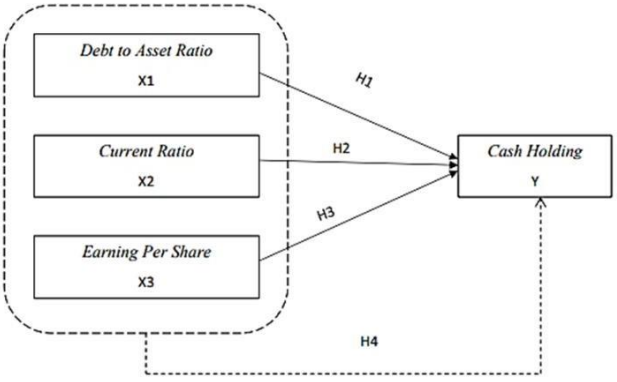

Fig. 2. Analysis Model

Hypothesis. The study's hypotheses seek to determine how several factors might affect cash holdings in manufacturing firms in the chemical and industrial sectors that are listed on the Indonesia Stock Exchangebetween 2019 and 2021. First, the H1 indicates a notion that Cash Holding is somewhat influenced by the Debt to Asset Ratio. Furthermore, H2 asserts that, within the designated sectors and time range, the CurrentRatio has a partial impact on Cash Holding. The suspicion presented in H3 is that, from 2019 to 2021, cashholdings in firms operating in the industrial and chemical industries that are listed on the Indonesia Stock Exchange may be somewhat impacted by earnings per share. The factors of Debt Asset Ratio, Current Ratio, and Finally are combined in H4.

3 Research Methods

3.1 Research Approach

This study uses a quantitative methodology, which denotes the application of an objective methodology, data gathering, quantitative data processing, and statistical testing techniques [3]. The purpose of the quantitative approach finding the independent variables in this study, namely theDebt Asset Ratio, Current Ratio and Earning Per Share on the dependent variable, namely Cash Holding.

3.2 Operational Definition of Variables

a. Independent Variable

1. Debt to Asset Ratio

Is a financial ratio that compares total debt to total company assets. Variable measurement indicators are taken through the balance sheet financial statements. According to [4] the formula for Debt to Asset Ratio:

$$Debt\ to\ Asset\ Ratio = \frac{\text{Debt}}{\text{Asset}} \text{ x } 100\%$$

2. Current Ratio

A ratio used to assess how well a corporation can pay its short-term debt. Variable measurement indicators are taken through the balance sheet financial statements. According to [4] the formula for Current Ratio:

$$Current\ Ratio = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

3. Earning Per Share

A ratio that describes how a company's ability to generate profits for each outstanding share. Variable measurement indicators are taken through the profit and loss financial statements. According to [4] the formula for Earning Per Share:

$$Earning\ Per\ Share = \frac{\text{Earning After Tax}}{\text{Total Shares Outstanding}}$$

b. Dependent Variable

1. Cash Holding

It is retained cash that is earned from income and can be easily converted into cash for current or future use. Variable measurement indicators are taken through the balance sheet financial statements. According to [5] the formula for Cash Holding:

$$Cash\ Holding = \frac{\text{Cash}}{\text{Assets}}$$

3.3 Population and Sampling Techniques

a. Population

The 78 manufacturing companies listed on the Indonesia Stock Exchange in the basic and chemical industry sectors between 2019 - 2021 comprise the population considered in this study.

b. Sampling Techniques

This study uses a purposive sampling method, where purposive sampling is a technique that determines the sample with certain considerations [12]. The criteria for companies sampled in this study overall 111 samples.

3.4 Methods and Data Collection Techniques

The method used in this research is a quantitative approach. The present investigation employed quantitative techniques to examine the impact of Earning Per Share, Debt to Asset Ratio, and Current Ratioon Cash Holding. Data collection technique used is secondary data where data collected by researchers indirectly or using references from other agencies or institutions [3]. The secondary data usedin this study is financial reports on manufacturing firms in the basic and chemical industrial sectors that were listed on the IDX between 2019 - 2021. The main website of the company as well as the IDX websitewere used to collect research data.

3.5 Data Processing Techniques

Data processing techniques are techniques used in a study after data collection is carried out. The data processing technique used in this study uses a descriptive approach based on the Statistical Package for theSocial Sciens (SPSS).

4 Results And Discussion

Research Results

4.1 Descriptive Statistics Test

Table 1. Descriptive Statistics Test

	N	Minimum	Maximum	Mean	Std. Deviation
DAR	111	.02	3.95	.5678	.59480
CR	111	.06	7.72	1.9101	1.36884
EPS	111	-84.00	993.00	93.5602	138.48662
CH	111	.00	1.42	.1270	.20606
Valid N (listwise)	111				

Considering the results of the descriptive analysis table, it can be seen that N or the amount of data is 111. Variable Debt to Asset Ratio (X1) 0.2 is the lowest possible value, 3.95 as the greatest value and average 0.5678 with standard deviation 0.59480. Current Ratio (X2) the minimum value is 0.06, the maximum value is 7.72 and the average is 1.9101 with a standard deviation of 1.36884. Earning Per Share(X3) minimum value of -84, maximum value of 993 and average 93.5602 with a standard deviation of 138.48662. Cash Holding (Y) minimum value of 0.00, maximum value of 1.42 and average 0.1270 with astandard dev of 0.20606.

4.2 Classical Assumption Testing

a. Normality Test

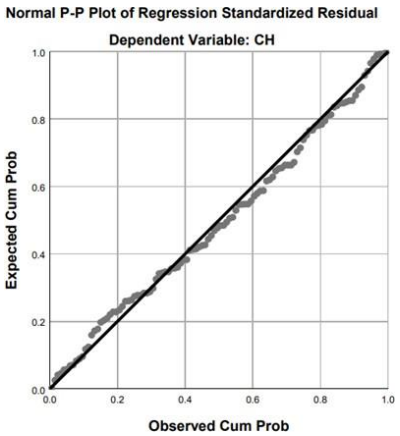

Fig. 3. Normal P -P Plot Graphics

The normal Probability Plot spreads around the diagonal line and moves in the diagonal directionbased on the normalcy test findings. According to the study's regression model, the variables passthe normalcy test and have a normal distribution.

b. Multicollinearity Test

Table 2. Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	DAR	.840	1.191
	CR	.835	1.197
	EPS	.990	1.010

The Multicollinearity test results indicate that the Earnings Per Share, Current Ratio, and Debt toAsset Ratio variables have a tolerance > 0.10 and VIF < 10. This means that this study does not occur in multicollinearity.

c. Autocorrelation Test

Table 3. Autocorrelation Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.539[a]	.291	.271	1.12626	.943

a. Predictors: (Constant), EPS, DAR, CR

b. Dependent Variable: CH

Through the Durbin Watson table with a five percent significance level, a sample size of 111 (n) and 3 independent variables (k = 3), it is obtained DL = 1.6355 and DU = 1.7463. Results of the autocorrelation test obtained the value of DW < DL < DU with a value of 0.943 < 1.6355 < 1.7463,so there is no autocorrelation.

d. Heteroscedasticity Test

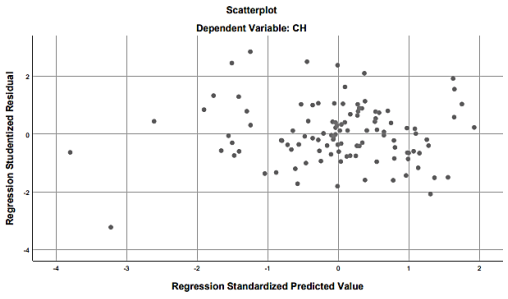

Fig. 4. Scatterplot Heteroscedasticity Test

Based on the analysis in the figure above, It represents how the points are dispersed randomly anddo not follow a particular pattern. This demonstrates that the regression model that will serve as the basis for the study exhibits no signs of heteroscedasticity.

4.3 Multiple Linear Regression Test

Based on data processing through the SPSS 25 program, the data output is as shown in the table below:

Table 4. Multiple Linear Regression Analysis Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	-2.451	.263		-9.300	.000	
	DAR	-.265	.178	-.133	-1.489	.139	.840
	CR	.676	.159	.380	4.249	.000	.835
	EPS	-.250	.059	-.346	-4.211	.000	.990

(2023) Displays the following multiple linear regression analysis results:

$$Y = - 2{,}451 - 0.265\ X_1 + 0.676\ X_2 - 0.250\ X_3 \quad (1)$$

On the basis of the aforesaid multiple linear regression equation's results, regression coefficient in thisstudy shows positive and negative results. The constant value (α) of the regression equation shows a value of - 2,451, In conclusion, if the independent variables that is, the Current Ratio, the Debt AssetRatio, and Earnings Per Share are equal to 0, the value of the Cash Holding variable is - 2,451. The table contains multiple linear regression analysis obtained the regression coefficient value (β1) Debt to Asset Ratio (X1) worth - 0.265 and a significance value of 0.139 which has no effect. The table contains multiple linear regression analysis obtained the regression coefficient value (β2) Current Ratio (X2) of 0.676 and a significance value of 0.000. The table contains multiple linear regression analysis obtained regression coefficient value (β3) Earning Per Share (X3) of - 0.250 and a significance value of 0.000.

4.4 Hypothesis Test

T Test

Table 5. Partial Test Results

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-2.451	.263		-9.300	.000
	DAR	-.265	.178	-.133	-1.489	.139
	CR	.676	.159	.380	4.249	.000
	EPS	-.250	.059	-.346	-4.211	.000

The aforementioned data leads to the conclusion that Cash Holding (Y) in Basic Industry and Chemical Sector Manufacturing Companies Listed on the Indonesia Stock Exchange 2019–

2021 is unaffected by Debt to Asset Ratio (X1). Cash Holding (Y) in Basic Industry and Chemical Sector Manufacturing Companies Listed on the Indonesia Stock Exchange 2019–2021 is positively and significantly impacted by Current Ratio (X2). Cash Holding (Y) in Basic Industry and Chemical Sector Manufacturing Companies Listed on the Indonesia Stock Exchange 2019–2021 is significantlyand negatively impacted by Earnings Per Share (X3).

4.5 The Coefficient of Determination

Table 6. The Coefficient of Determination

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.539[a]	.291	.271	1.12626	.943

a. Predictors: (Constant), EPS, DAR, CR

b. Dependent Variable: CH

Based on the aforementioned determination test findings, R-Square has a value of 0.291, meaning that 29.1% of the independent variables, namely Debt to Asset Ratio, Current Ratio, and Earning Per Share,are able to explain the effect on the Cash Holding variable in Basic Industry and Chemical Sector Manufacturing Companies Listed on the Indonesia Stock Exchange 2019-2021. While the remaining 70.9% is explained or influenced by other independent variables outside those used in this study.

5 Discussion

The Impact of Debt to Asset Ratio on Cash Holding in Manufacturing Companies in the Basic Industry and Chemical Sector Listed on the Indonesia Stock Exchange for the Years 2019–2021.

The value of the significance of the Debt to Asset Ratio (X1) variable of 0.139 is greater than 0.05,it can be concluded that H0 is accepted and H1 is rejected, meaning that partial Debt to Asset Ratio (X1) has no effect on the Cash Holding variable (Y).
These results are in line with the research of Gunawan Siregar et al., (2022) It indicates that the Debt Asset Ratio is not affected by Cash Holding. This statement suggests that the company's Cash Holding is unaffected by either high or low debt levels. This is due to the fact that corporations typicallyfinance their assets that yield a higher return on investment than cash holdings, and the cash received from debt is not retained by the business or used for operating funding instead it is immediately put to use for investments or other activities that have productive value.

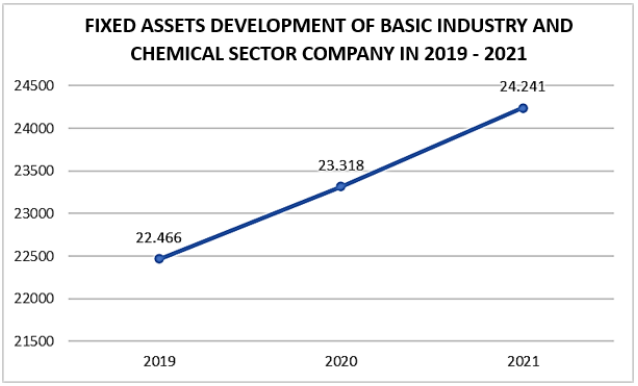

Fig. 5. Fixed Assets of Manufacturing Companies in the Basic Industry and Chemical Sector

According to the analysis results displayed in the above figure, manufacturing enterprises in the domain of basic and chemical industries had an increase in their average fixed assets between 2019 and2021. This means that the funding obtained from debt does not go into cash and also does not increase Cash Holding, but is directly used by the company to invest.

The Impact of Current Ratio on Cash Holding in Manufacturing Companies in the Basic Industryand Chemical Sector Listed on the Indonesia Stock Exchange for the Years 2019–2021.

Given that the Current Ratio (X2) variable's significance value of 0.000 is less than 0.05, it can besaid that H0 is rejected and H1 is accepted, indicating that the Current Ratio (X2) has a significant and positive impact on the Cash Holding (Y) variable to some extent.

The trade-off theory, which holds that a corporation will determine how much debt to take on by weighing the costs and advantages to the business, is supported by the study's findings. The amount of cash in the company may rise with a high current ratio. This is so because debt or outside finance alwaysresults in a rise in the company's cash.

According to research by Elnathan & Susanto (2020), According to this, a firm's the Current Ratiois substantial and positive. impact on cash holdings. Specifically, a higher current ratio indicates that a company has more cash on hand, which makes it easier for the company to get outside funding. The results showed that in the case of manufacturing companies in the basic and chemical industry sectors that experienced an increase in the Current Ratio value in the 2019-2021 period, namely the company PT Panca Budi Idaman Tbk (PBID) in 2019 amounting to 2.66, then in 2020 it rose to 3.85 and in 2021it rose to 4.62. The increase in current ratio occurs due to funding from third parties or debt, which automatically causes an increase in cash holding in 2019 of 0.17, then in 2020 it rose to 0.2 and in 2021it was 0.21.

The Impact of Earnings Per Share on Cash Holdings in Manufacturing Companies in the Basic Industry and Chemical Sector Registered Listed on the Indonesia Stock Exchange for the Years 2019–2021

Given that the Earning Per Share (X3) variable's significance value of 0.000 is less than 0.05, it can be said that H0 is rejected and H1 is accepted, indicating that the Cash Holding (Y) variable is significantly and negatively impacted by Earning Per Share (X3).

The results of this study are in accordance with research conducted by Surya Abbas et al., (2020)It states that Earnings Per Share has an impact on Cash Holding and implies that a firm will use less Cash Holding as an internal funding source to pay down corporate debt if Earnings Per Share rises. Thisis so because greater values for Earnings Per Share signify increased profits generated by the business on each outstanding share.

The results showed that the case of a manufacturing company in the basic and chemical industry sector that experienced an increase in the value of Earning Per Share in the 2019-2021 period, namely the company PT Berlina Tbk (BRNA) in 2019 amounted to 163, then in 2020 it rose to 169 and in 2021it rose to 192. The increase in Earning Per Share occurred due to an estimated increase in profits whichwould later be paid for corporate debt so that the company's cash decreased. The company will reduce cash holding as a source of internal funds. Profit is one of the sources of internal funding. The higher the profit earned by the company will reduce the company's cash as one of the internal sources, this is because the company has debt. As a result, there was a decrease in cash holding in 2019 of 0.56, then in 2020 it decreased by 0.30 and in 2021 it amounted to 0.01.

1. **The impact of Earnings Per Share, Debt to Asset Ratio, and Current Ratio on Cash Holding in Manufacturing Companies in the Basic and Chemical Industry Sectors Listed on the Indonesia Stock Exchange 2019–2021 is simultaneous.**

The Cash Holding variable is simultaneously impacted by the Debt Asset Ratio, Current Ratio, and Earning Per Share variables, as evidenced by the Ftable value of 2.69 and the Fcount value of 14.493, which is more than the Ftable value. Subsequently, the output results above were examined forsignificance. It was determined that the debt to asset ratio, current ratio, and earnings per share all havean impact on cash holdings simultaneously. The significance value of 0.000 was determined because itis less than 0.05, which is in line with the criteria used to make the F test decision.

According to the results of the determination test mentioned above, the R-Square value is 0.291, which indicates that 29.1% of the independent variables—the debt-to-asset ratio, the current ratio, and earnings per share—can account for the variation in the cash holding variable in manufacturing companies in the basic and chemical sectors that are listed on the Indonesia Stock Exchange between 2019 and 2021. Other independent variables not included in the study's set of independent variables account for the remaining 70.9%.

6 Conclusion

The research on Debt Asset Ratio, Current Ratio, and Earning Per Share's impact on Cash holding in Basic Industry and Chemical Sector Manufacturing Companies listed on the Indonesia Stock Exchange 2019 - 2021 that found the Debt to Asset Ratio had no effect on Cash Holding, Current Ratio had a positive and significant effect, while Earning Per Share had a negative and significant effect. Simultaneously, all three factors influenced Cash Holding.

Recommendations based on the findings suggest are companies should focus on managing cash effectively to increase it further, particularly by adjusting cash allocation before making investments. Investors should consider Current Ratio and Earning Per Share when making investment decisions to avoid potential risks. Future research should broaden its scope to include additional industry sectors for more comprehensive and accurate findings.

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