The Impact of Working Capital Management on Profitability with Leverage as an Moderating Variable in Basic Industrial and Chemical Sectors

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Abstract. This Research to analyze leverage in moderating the effect of WCM to profitability in basic and chemical industrial companies in Indonesia. Using the purposive sampling method, there were 99 companies for three years, 2018 to 2020, this study was analyzed using SPSS 26 software. The results showed that Days Payable Outstanding (DPO) and Cash Conversion Cylce (CCC) had a positive and significant effect on profitability. Meanwhile, Days Sales Outstanding (DSO) has a negative and significant effect on profitability. This study also proves that there is no significant effect of the leverage variable as a moderator between working capital management (DIO, DPO, DSO, CCC) on company profitability.

Keywords: Profitability · Leverage · Working Capital Management

1 Introduction

Basic Industrial and Chemical Sectors are the basis of the manufacturing industry because they are related and can build Indonesia's manufacturing industry. So that on the Making Indonesia 4.0 roadmap, Basic Industrial and Chemical Sector is one of the sectors that is a priority for development because it has a significant contribution to the Indonesian economy in accordance with the Making Indonesia roadmap published by the Kementerian Perindustrian Republik Indonesia (2020). This is done so that Indonesia can jump into a better future to be able to take opportunities in the fields of Education, Economics, also Business.

To be able to take important opportunities in the fields of Education, Economics and Business, Indonesia through the Ministry of Industry summarized the 2020–2024 Strategic Plan. From there, it is illustrated that Indonesia has abundant natural resources to produce raw materials, while one of the main problems faced in national industrial development is the shortage of raw materials and auxiliary materials. From these conditions, companies in the Basic Industrial and Chemical sector have the potential for national industrial development to realize a better economy and business through education.

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P. Susanto et al. (Eds.): PICEEBA 2022, AEBMR 250, pp. 586–594, 2023.
https://doi.org/10.2991/978-94-6463-158-6_51

In managing the operation of Basic Industrial and Chemical Sectors, they need working capital to carry out the company's operational activities. Without sufficient working capital, companies in the Basic Industrial and Chemical Sectors will be constrained in carrying out the process of providing basic materials or production. The management of working capital refers to the management of inventories, receivables and other current assets, current obligations to increase the company's profitability. Funding decisions on working capital are important things done by the company's management. Such funding can come from internal sources such as retained income, debt collection or external sources through short-term or long-term loans [2]. Short-term or long-term funding decisions may cause agency problems. For example, the company decides to fund working capital with long-term loan funding that may be preferred by managers as an agency to ensure funding and avoid interest that is variable. Of course, this will cause problems on the part of shareholders because the interest rate caused by long-term loans is certainly greater. In addition, lenders will continue to strive to offer long-term loans because they are more profitable compared to short-term loans. Short-term or long-term loans have advantages and disadvantages, the excess will be reduced if the use of maximum limit loans. The use of long-term or short-term loans must be determined by the best arrangements and one of them is to finance working capital. Working capital financing from the portion of short-term and long-term debt combined to finance working capital will have an impact on increasing profitability. Thus working capital management moderated by leverage can increase the company's profitability.

Working capital management at Basic Industrial and Chemical Sectors companies ranges on a 2:1 scale over the past three years. For more details, you can see Fig. 1.

From the figure above, it can be seen that the average working capital in Basic and Chemical Industrial Sector Companies from 2018–2020 ranges from 2:1 scale. Based on the results of the analysis of financial statements in 2018, the average working capital is 2.3. This shows that the composition of current assets is quite high compared to current debt. So it can be said that Basic and Chemical Industrial Sector Companies have an ideal working capital level. With efficient WCM, it will have an impact on increasing the

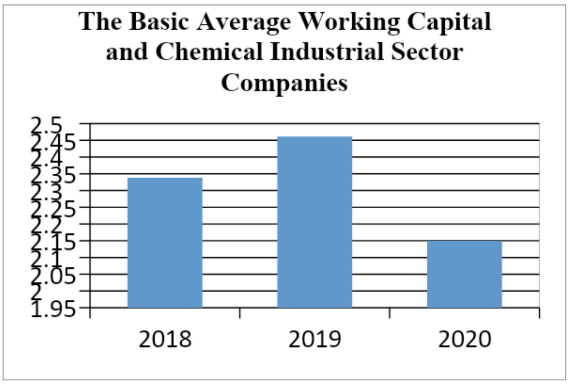

Fig. 1. Average working capital of Basic Industrial and Chemical Sectors Companies. Source: self processed

profitability of the company. This is also in line with research conducted by [3–6] proves that working capital management can affect the profitability of the company. This shows that there are several factors that must be considered in making efficiency to working capital management, one of which is by paying attention to leverage [7].

Mahmood et al., (2019) leverage is a gauge of the company's ability to meet all its financial obligations consisting of short-term debt and long-term debt. Leverage is a financial ratio to measure the extent of debt use to the amount of assets a company has. If the company's working capital management and leverage are managed optimally, then the profitability of the company also increases. Research conducted by [2] leverage has a strong moderator role in the relationship of working capital to profitability.

From previous research, it appears that WCM is an important element as a driving factor for company profitability. There has been no research assessing the role of leverage mediation in assessing the relationship of WCM to profitability, especially in basic materials and chemical sector companies to date. Therefore, the author is interested in conducting research with the title "The Effect of Working Capital Management on Profitability with Leverage as a Moderating Variable in Basic and Chemical Industrial Sector Companies".

2 Profitability, Leverage, Working Capital Management

Trade off theory explains about the company's debt and equity at a certain level there will be a balance between the costs incurred and the profits earned by the company. According to [8] this theory states that a company will not be able to achieve optimal value if the company's funding is fully financed by debt or fully capital. Balanced working capital will have an impact on the company's profit. The optimal proportion of debt will have an impact on increasing the company's profitability which implies greater debt because it is less risky for lenders [9]. From this trade off theory, it can be concluded that the company can increase its profitability by managing working capital using debt optimally.

The agency theory proposed by Jensen & Meckling (1976) explains the relationship between the management as an agent and the owner of capital as the principal [10]. The management as the manager of the company must be responsible to the owners of capital because the owners of capital have given authority to management to make the best decisions for the progress of the company they manage. The essence of this agency theory is how the company's management manages working capital which has implications for the company's profitability and how to moderate leverage.

2.1 Profitability

One way to measure the profitability of a company is by using the Return on Assets (ROA) ratio. ROA is also known as profitability, as the ratio describes a company's ability to profit from each rupiah asset used. ROA measures a company's return on total assets, this ratio can be used to determine if a company is using its assets efficiently in its operational activities [11]. The ROA formula is:

$$\text{ROA} = \frac{\textit{Net Profit}}{\textit{Total Assets}} \times 100\%$$

2.2 Leverage

Leverage moderation in question, namely this solvency variable, can be interpreted as the way the company achieves influence by using debt, seeing the funds provided by the owner as a guarantor of risk and if the company produces more investments financed by credit funds compared to paying interest [12]. The amount of debt used by the company can be measured using the Debt to asset ratio (DR). Formula of leverage:

$$\text{DR} = \frac{\textit{Total Debt}}{\textit{Total Asset}} \times 100\%$$

2.3 *Days Inventory Oustanding (DIO)*

DIO is a time span for a company to convert its inventory into cash back [3]. Days Inventory Oustanding (DIO) measures how many days it takes a company to produce and sell all its inventory. With the sense that the shorter the company's Inventory Conversion Period, the higher the profitability obtained.

$$\text{DIO} = \frac{\textit{Average Inventory}}{\textit{Cost of Goods Sold}} \times 365 \text{ days}$$

2.4 Days Sales Oustanding (DSO)

The time span used by companies in measuring credit sales into cash is Days Sales Oustanding (DSO). Research conducted by [3] has proven that DSO has an important role in the profitability of the company, because with the optimal level of receivables will be charitable in increasing sales. (Kasmir (2018) If *Days Sales Oustanding* (DSO) gets shorter, then the profitability of the company will increase.

$$\text{DSO} = \frac{\textit{Average Account Receivables}}{\textit{Net Sales}} \times 365 \text{ days}$$

2.5 *Days Payable Oustanding (DPO)*

Days Payable Oustanding (DPO) is the time span it takes a company to pay suppliers from a non-penalty bill measured using the formula [11].

$$\text{DPO} = \frac{\textit{Average Account Payables}}{\textit{Cost of Goods Sold}} \times 365 \text{ days}$$

2.6 Cash Conversion Cycle (CCC)

Results of the CCC calculation will be good in value by minimizing Days Inventory Oustanding (DIO) and Days Sales Oustanding (DSO) and extending Days Payable Oustanding (DPO). CCC is a ratio that measures a company ranging from buying materials or materials, selling production results until business debt is repaid until it becomes cash back. According to [11].

$$\text{CCC} = \text{DSO} + \text{DIO} - \text{DPO}$$

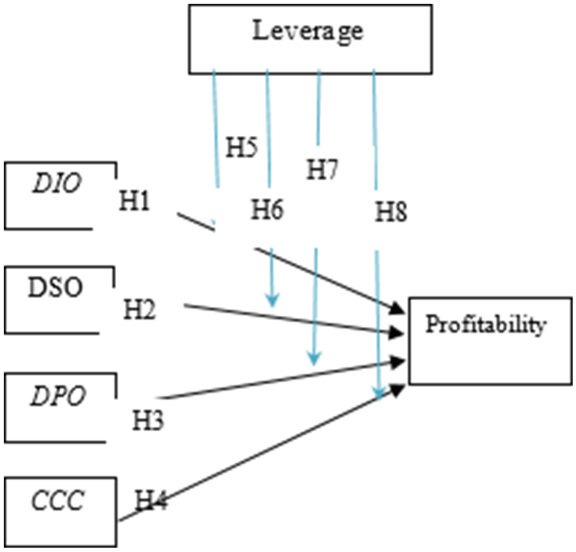

Fig. 2. Conceptual Frameworks

2.7 Conceptual Frameworks

Agency theory explains that short- or long-term funding decisions may cause agency problems. Working capital funding with long-term or short-term loan funding is a comparison by considering what is more profitable for each party. Thus working capital management moderated by leverage can increase or decrease the profitability of the company. Then the conceptual framework of research can be described in Fig. 2.

3 Research Methods

3.1 Types of Research

This research is a type of quantitative-based research that uses secondary data sources [13]. Secondary sources are sources that provide information that is not directly gathered by the data collectors. This study used secondary data and used a quantitative approach to study the results. The dependent variable and the moderating variable were both based on empirical testing, while the independent variable was also empirically tested. The study's dependent variable is profitability (Y), the moderating variable is leverage (Z), and the independent variable is working capital management (X).

3.2 Research Object

The subject of this study is a company listed in the Basic Industry and Chemicals Index of the Indonesian Stock Exchange, which is accessed through www.idx.co.id, The observation of the financial statements of 99 companies.

4 Results and Discussion

4.1 Descriptive Statistical Test

This research was analyzed by descriptive statistical test using multiple linear regression model and moderation test using Moderated Regression Analysis (MRA). To test the hypothesis, the data was analyzed with the help of the SPSS software.

Based on the results of descriptive statistical tests, it can be obtained information on the maximum, minimum, mean and standard deviation of each variable, namely DIO, DSO, DPO, CCC (Working Capital Management), Leverage (DR), and Profitability (ROA).

4.2 Classic Assumption Test

The residual normality test is a test used to determine whether the residuals used in a study are normally distributed or not [14]. The Kolmogrov-Smirnov test is used to perform this test. The normality test results prove that the test results of a sample of the Kolmogorov-Smirnov test show results greater than 0.05, Given the data, we can conclude that the residuals are normally distributed.

Multicollinearity test was conducted to determine the relationship of the independent variables in the regression model. A good regression model is one that is free from multicollinearity (Ghozali, 2013). Multicollinearity test can use VIF value or tolerance, VIF value < 10 and tolerance > 0.10. The following are the results of the multicollinearity test shows the tolerance value is >0.10 and the VIF value is <10. So it can be concluded that there is no multicollinearity.

The autocorrelation test within the two equations shows that the test performed by the 2 regression models has no symptoms of autocorrelation because dw count > du and dw count continues to be but < 4-du. The equation indicates that there's a statistically significant relationship between the variable and also the variable. Thus, the research regression model is closed freed from heteroscedasticity.

4.3 Multiple Linear Regression Analysis

Multiple linear regression analysis is an analysis of the relationship between the dependent variable and the independent variable. Based on the test results the regression equations before moderation used in this study are as:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 Z + \beta_6 X_1.Z + \beta_7 X_2.Z + \beta_8 X_3.Z + \beta_9 X_4.Z$$

R square in the regression equation before the moderating variable is 0.528, it can be interpreted that the working capital management variable has an effect of 52.8% on profitability. Meanwhile, after the moderating variable increased to 0.825, namely with leverage moderation, R Square increased to 68.1%. It can be concluded that the leverage variable can strengthen the effect of working capital management on company profitability.

A constant with a amount of 0,113 means that if the independent variable DIO, DSO, DPO, CCC and leverage (DR) is worth 0, then the profitability variable symbolized by ROA is 0.113.

H1: Days Inventory Oustanding (DIO) to Profitability.

It is known that the value of the significance of the interaction variable between Days Inventory Oustanding (DIO) and Profitability of 0.147 (>0.05) proves that there is no dio influence on profitability.

H2: Days Sales Oustanding (DSO) to Profitability

A significant value of DSO of 0.000 (<0.05) that DSO has an influence on profitability. Additionally, the coefficient value of the DSO variable is 0.02. This coefficient value illustrates that for each increase in DSO by one unit, the ROA will increase by 0.02 assuming the worth of the variable quantity doesn't change. This shows that the greater the DSO of a corporation, the greater the ROA.

H3: Days Payable Oustanding (DPO) to Profitability

A significant value of DPO of 0.000 (<0.05), it can be interpreted that the supplier's payment time span from bills without penalty has an influence on profitability with a positive influence coefficient of 0.02%. This coefficient value illustrates that for every increase in DPO by one unit, the ROA will increase by 0.02 assuming the value of the independent variable does not change. This shows that the greater the DPO of a company, the greater the ROA.

H4: Cash Conversion Cycle (CCC) to Profitability

The value of CCC significance is 0.005 which is significant. This means that the company's business ranging from buying materials or materials, selling production results until business debt is repaid until it becomes cash back can be managed briefly, has a significant impact on the acquisition of profitability.

H5:Leverage moderates the influence of Days Inventory Outstanding (DIO) on Profitability

The significant value of DIO that is interacted with leverage to profitability is 0.016 (<0.05) therefore we can assess that after leverage can have a positive influence between Days Inventory Outstanding (DIO) on profitability.

H6: Leverage moderates the influence of Days Sales Oustanding (DSO) on Profitability

The significant value of DSO that is interacted with leverage to profitability is 0.016 (<0.05). This means that leverage is able to moderate the influence of DSOs on profitability.

H7: Leverage moderating the influence of Days Payable Oustanding (DPO) has an influence on Profitability

The significant value of DPO that is interacted with leverage to profitability is 0.000 (<0.05) with a negative influence coefficient of -0.003 or 0.3%. This coefficient value illustrates that for every increase in DPO by one unit, the ROA will decrease by 0.3% assuming the value of the independent variable does not change. This shows that the greater the DPO, the ROA obtained will decrease by 0.3%.

H8: Leverage moderates the effect of Cash Conversion Cycle (CCC) on Profitability

The significant value of CCC interacted with leverage to profitability of 0.138 (>0.05) leverage cannot moderate the influence of Cash Conversion Cycle (CCC) on the company's profitability.

5 Conclusion

This study analyzes how the effect of working capital management on profitability and how the moderating effect by the leverage variable. Working capital management with Days Payable Outstanding (DPO) indicators, Cash Conversion Cycle (CCC) has a positive effect on Profitability. Meanwhile, Days Sales Outstanding (DSO) negatively affects Profitability. Meanwhile Days Inventory Outstanding (DIO) on Profitability has no effect.

In a moderating effect, DIO) and DSO has a positive effect on Profitability. Days Payable Outstanding (DPO) negatively affects Profitability moderated by leverage (DR) and Cash Conversion Cycle (CCC) has no impact on Profitability moderated by leverage (DR). This research has limitations, namely in basic industry and chemicals sector for the 2018–2020 period, it is hoped that there will be further research that analyzes the same variables across sectors so that it can be seen WCM plays a more important role in certain sector companies.

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