

The Impact of The COVID-19 Pandemic on Indonesian Retail Companies' Working Capital Management

Wimpie Yustino Setiawan^{1*} and Yohanes Berchmans Sigit Hutomo²

^{1,2} Department of Accounting, Faculty of Business and Economics, Universitas Atma Jaya Yogyakarta

wimpie.setiawan@uajy.ac.id

Abstract

Indonesian government imposed a social distancing policy in response to the declaration of COVID-19 as a pandemic but still allowed companies to operate their business with several restrictions. As a result, retail companies had to manage their working capital more prudently in order to keep the stability of their business operations. This research aims to examine the impact of the COVID-19 pandemic on the working capital management of Indonesian retail companies listed on the Indonesia Stock Exchange. The results of the current study showed that the COVID-19 pandemic did not affect profitability (measured by return on assets and return on equity) and the working capital management (measured by cash conversion cycle and working capital requirement) of retail companies. However, other proxies of working capital management (i.e., net liquid balance and operating cash flow) were found to be significantly different before COVID-19 and during the pandemic.

Keywords: *working capital management, cash conversion cycle, working capital requirement, net liquid balance, operating cash flow.*

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1. INTRODUCTION

During the COVID-19 pandemic, a number of companies have been liquidated due to financial difficulties, resulting from a significant drop in sales and, consequently, poor financial performance. Previous studies have shown that the profitability of companies is also significantly affected by their working capital management (Tjandra et al., 2022; Akbar et al., 2021; Gaisani et al., 2021; Devi, Warasniasih, Masdiantini, and Musmini, 2020). A study by Al Shattarat et al. (2010), for example, has reported that profitability can be improved by lowering inventory days and account receivable days. Previous research has also shown that the change in the financial environment influences working capital management.

Indeed, the COVID-19 pandemic has affected corporate financial performance in many industries. Managing working capital has become more important than ever, as retail businesses have had to manage their working capital more prudently in a drastically changing social and economic environment. After the Indonesian government declared a national emergency in early 2020, many retailers were forced to close. However, essential retail businesses such as grocery stores, convenience stores, and other stores selling necessities were required to stay open. The pandemic has severely affected consumer demand, with people being asked to stay home. The Indonesian Retailers Association (Aprindo) reported that during the first four months of 2021, the real sales index (RSI) fell 18.1 percent (February), 17.1 percent (March), and 14.1 (April).

A historical data study finds evidence of the decreased asset returns during and after pandemics (Jordà, Singh, & Taylor, 2020). Working capital management, which sustains a company's operating activity, has attracted more attention during such times. It is the source and use of short-term capital, including current assets and current liabilities, and is determined by company characteristics. A firm's working capital is also affected by the financial environment, in general, and the fluctuation of business indicators, in particular. Therefore, in order to adapt to the changing business environment, companies have to manage their working capital more prudently. Consequently, scrutinizing the elements of working capital that may help companies to survive during this difficult situation is extremely important. The present study, therefore, aims to investigate the impact of the COVID-19 pandemic on the working capital management of Indonesian retail companies, proxied by cash conversion cycle (CCC), working capital requirement (WCR), net liquid balance (NLB), and operating cash flow (OCF).

2. LITERATURE REVIEW

Generally, working capital is defined as the difference between a company's current assets and liabilities. Cash and cash equivalents, accounts receivable, inventories, and short-term investments are the components typically making up current assets. Meanwhile, current liabilities are usually made up of accounts payable, short-term loans, and short-term accruals. Research has shown that working capital is affected by company characteristics. In a study using a total sample of 1,181 companies from 36 industries over a 19-year period, Hawawini, Viallet, and Vora (1986) found evidence of the significant industry effect on companies' working capital investment policies. The computer industry, for example, made an average net investment of thirty-six cents in their operating cycle for every dollar of sales. In contrast, air transportation and telephone companies made small or zero investments in their operating cycle.

Major public health emergencies have recently occurred worldwide due to the outbreak of COVID-19. Because of the highly transmissible nature of the virus, almost all countries have been forced to implement social distancing measures as well as quarantine. Inevitably, aggregate demand for most of the goods and services around the world has dropped significantly, resulting in lowering exports, imports, and general economic activities. During the COVID-19 pandemic, the supply chain has become unstable, causing operational disruptions and raising the stress on working capital. The increasing demand and supply uncertainty has caused companies'

inventory days to soar, although the impact was not evenly observed across all industries and regions. In such a situation, a company's working capital will be significantly influenced by their swiftness to react to changes (Windaus and Brady, 2022). Research by Pratama, Pontoh, and Pinastik (2021) indicates that retail firms experience a significant decrease in their profitability, particularly return on assets (ROA) and return on equity (ROE), but no critical decrease in net profit margin (NPM). On the other hand, Devi, Warasniasih, Masdiantini, and Musmini (2020) have found a decline in various businesses' financial performance. To address the situation, a company may adopt either a conservative or aggressive working capital management policy. If a company adopts a conservative policy, it will increase its investment in working capital, particularly inventory and receivables, with the aim of improving sales and, consequently, profitability (Tauringana & Adjapong Afrifa, 2013). Conversely, a firm adopting an aggressive policy will usually reduce its investment in working capital. In this strategy, a minimum amount of inventory may allow the company to reduce inventory holding costs. At the same time, lower accounts receivable may provide the company with better opportunities for investing the cash not tied up in receivables, thereby increasing the firm's profitability.

Working capital management is an essential part of business financial planning and, as previous studies have shown, often determines the success or failure of a company. The most common sign shown by these companies with working capital mismanagement is cash flow problems. Since working capital is needed to run the business activities of a company, inadequate working capital may lead to liquidity problems and, consequently, financial distress. An excessive working capital, however, can also be harmful, particularly when the working capital mostly comes from loans, resulting in high interest expenses borne by the company. A company that is able to generate operating cash flow tends to have higher amounts of cash and working capital. The operating cash flow generated from the company's assets, in turn, will affect the firm's liquidity. Nevertheless, several studies suggest that operating cash flows have a significantly negative effect on working capital requirements. Meanwhile, companies with high profits can provide more flexible credit facilities to their customers and, thereby, are more likely to have a greater working capital investment (Tjandra, Murhadi, and Herlambang, 2022).

A number of previous studies have shown that a firm's working capital is determined by how long they have been operating, the firm's size and leverage, as well as the company's profitability, growth opportunities, asset tangibility, and operating cash flow (Cuong & Nhung, 2017; Moussa, 2019; Singh & Kumar, 2017). Tjandra et al. (2022) have found that profitability and growth opportunities positively affect working capital, whereas firm age, leverage, and asset tangibility negatively influence working capital. Meanwhile, operating cash flow and firm size have been found to have no effect.

On the other hand, Pratama et al. (2021) studied 31 publicly-listed retail companies' profitability in Indonesia before and after COVID-19. They found that the companies' return on assets (ROA) and return on equity (ROE) contrasted significantly before and after COVID-19. However, the results of their study showed no significant differences in net profit margin (NPM) before and after COVID-19. Meanwhile, Devi et al. (2020) examined various industries' financial performance by using 214 companies listed on the Indonesia Stock Exchange from a variety of industries as the sample. Their study tested the companies' financial performance

before and after the COVID-19 pandemic. They found that leverage and short-term activity ratios increased during the pandemic, whereas liquidity and profitability ratios declined, although no significant difference in the liquidity ratio and leverage ratio was observed. They also found a significant difference in the profitability ratio and short-term activity ratio before and during the COVID-19 pandemic. Surprisingly, the findings indicated that the consumer goods sector was the one that saw an increase in the liquidity, profitability, and short-term activity ratios but a drop in the leverage ratio. Meanwhile, the property, real estate, building construction sector, and the finance, trade, services, and investment industries were experiencing decreased liquidity and profitability ratios.

Furthermore, a study by Meah, Sen, and Sahabuddin (2021) examines working capital decisions and the efficiency of working capital management (WCM) during COVID-19. Since the investment decisions of all current assets in a company's projects may either enable the company to earn more profit or put the firm at risk of facing a liquidity crisis, a financial manager must possess the ability to make good judgments regarding WCM. Their study shows that the efficiency of WCM has a significant impact on the profitability and days in inventory outstanding. In contrast, days in sales outstanding have a significantly negative impact on profitability, while aggressive investment and finance decisions significantly contribute to the profitability of the firm. In the study of Tarkom (2021), the working capital requirement (WCR) is used as an alternative measure of the cash conversion cycle (CCC), as it provides a more convenient accounting measure of a company's investment in its operating cycle. The study has found that COVID-19-exposed firms operate with higher levels of CCC.

The cash conversion cycle (CCC) is the continuing cash flow from suppliers, to inventory, to accounts receivable, and back into cash. It is computed by subtracting the number of days payments are deferred to suppliers from the number of days a company's funds are invested in inventories and receivables. By using a generous credit policy, a firm can have larger sales, thus extending the cash cycle. In this case, a longer CCC may result in higher profitability. This may occur because a company may reduce supply costs and price fluctuations by holding larger inventories, as found by Baños-Caballero, García-Teruel, and Martínez-Solano (2010). Additionally, sales and profitability may be increased by extending greater trade credit to customers. However, a longer CCC will, *ceteris paribus*, hurt a firm's profitability. The study indicated that there is a strong negative relationship between the company's net-trade cycle length and profitability.

The government of China, in which the COVID-19 pandemic had its origins in Wuhan in December 2019, had imposed business closures, resulting in global business disruptions. Some industries, such as the retail industry, were bound to face difficulties in the short term. Still, other sectors, such as supply chain-based firms, manufacturers, and healthcare facilities, had been facing issues such as declining demand, cash flow reduction, plummeting sales revenues, workforce unavailability, and marketing problems. A study by Rababah, al Hadar, Sial, Chunmei and Cherian (2020) indicated that the Chinese listed companies had severe negative effects of the COVID-19 pandemic on their financial performance. The decrease in the companies' revenues, profitability, and investment across industries resulted from cutting down the business operations, sales, and production levels due to adopting a social distancing policy.

In managing their working capital, a company will attempt to defer the payments to suppliers as long as possible and collect the accounts receivable from customers as quickly as possible. Due to its importance in sustaining the company's operating activity, working capital management has drawn much attention during the COVID-19 pandemic. Working capital, which includes current assets and current liabilities, is the source and use of short-term capital and is determined by company characteristics and financial environment, particularly the fluctuation of business indicators (Jeng-Ren Chiou and Li Cheng, Han-Wen Wu, 2006). Based on the above-mentioned previous research findings, the following hypothesis is formulated:

The COVID-19 pandemic harms the working capital management (proxied by cash conversion cycle, net liquid balance, working capital requirement, and operating cash flow ratio) of Indonesian listed retail companies.

3. METHODOLOGY

The list of public retail companies is selected as a sample of the study. It is derived from IDN Financials. Quarterly financial data are collected from the Indonesia Stock Exchange website (idx.co.id) from the fourth quarter of 2018 to the third quarter of 2021. The data were then split into two sub-periods, namely "Pre-COVID period" (2018Q4 to 2020Q1), which is the period before COVID-19 was declared a global pandemic, and "COVID period" (2020Q2 to 2021Q3), which is the period after COVID-19 was declared a global pandemic.

The present study uses four proxies for working capital management. The first variable used in this study to measure working capital management is the cash conversion cycle (CCC), which is defined as the length of time (in days) a company takes to convert resources into cash holdings. Traditionally, CCC is calculated as follows (Al Shataratt et al., 2010):

$$\text{Cash Conversion Cycle} = \text{Number of Days Accounts Receivable} + \text{Number of Days Inventory} - \text{Number of Days Accounts Payable}$$

In addition to using the traditional formula of CCC, following Tarkom (2021), the working capital requirement (WCR) is used in the present study as an alternative measure of CCC. A higher WCR implies that a company needs more days to regain its investment (Tarkom, 2021). WCR is calculated as follows:

$$\text{Working Capital Requirement} = (\text{Receivables} + \text{Inventories} - \text{Payables}) / \text{Sales}$$

According to the findings of Jeng-Ren Chiou and Li Cheng, Han-Wen Wu (2006), net liquid balance (NLB) is also a proxy of working capital management, used to evaluate the management of working capital and the capability of raising and allocating capital. NLB and WCR were considered better proxies of working capital than any based on traditional indicators (Hawani et al., 1986). NLB is calculated by dividing the formula used by Jeng-Ren Chiou and Li Cheng, Han-Wen Wu (2006) by the amount of total assets:

$$\text{NLB Ratio} = (\text{Cash and Cash Equivalents} + \text{Short-term Investments}) - (\text{Short-term Debt} + \text{Commercial Paper Payable} + \text{Long-term Debt Maturing within a Year}) / \text{Total Assets}$$

Operating cash flow, which is considered the most important part of the cash flow statement, measures the difference between cash inflows and cash outflows of a firm's operating activities (Tjandra et al., 2022). Shortening the cash conversion cycle improves the operating cash flow of a firm because the longer the cash conversion cycle, the greater the need for expensive external financing. Operating cash flow is calculated as follows (Tjandra et al., 2022):

$$\text{Operating Cash Flow} = \text{Operating Cash Flow} / \text{Total Assets}$$

4. RESULT AND DISCUSSION

4.1. Descriptive Statistics

The research subjects of the current study were the retail companies listed on the Indonesia Stock Exchange, consisting of a total sample of 180 quarterly financial statements from 30 companies. The descriptive statistics showed that the profitability of retail companies, measured by Return on Assets (ROA), declined from -0.0320, on average, before the COVID-19 pandemic, to -0.0523 during the global pandemic. The alternative measure confirmed this profitability decline, Return on Equity (ROE), which decreased from, on average, 0.0041 before the pandemic to -0.0884 during the pandemic. A paired-sample t-test was then conducted to examine whether or not this decline in corporate profitability was statistically significant.

Meanwhile, the companies' cash conversion cycle (CCC) showed an interesting result. The CCC mean decreased from 91.59 before the COVID-19 pandemic to 60.22 during COVID-19. This indicates that retail businesses need a shorter time during the pandemic to convert their resources into cash holdings. This might be due to the fact that a large number of retail companies have shifted to online business during the crisis in order to survive in the midst of social distancing and lockdown policies imposed by the government. Since most sales transactions carried out through e-commerce are cash sales, this may have helped the retailers to shorten the companies' collection period and days to sell inventory, thus lowering their cash conversion cycle. This result was confirmed by the alternative measure of CCC, which is the Working Capital Requirement (WCR). The average WCR showed a decrease from 0.1076 (pre-COVID) to -0.2477 (during COVID). The negative WCR during COVID may be caused by the fact that retail companies tend to reduce their levels of inventory amidst uncertainties due to the global pandemic. The decline of the average Net Liquid Balance (NLB) ratio, another proxy of working capital management, from -0.9112 to -1.7651, also confirmed this lower conversion cycle. Finally, a shorter cash conversion cycle (lower CCC and WCR) will improve the operating cash flow of a firm because the longer the cash conversion cycle, the greater the need for expensive external financing (Tjandra et al., 2022). Therefore, the operating cash flow ratio (OCF) increased from an average of 0.0052 before the pandemic to 0.0494 during the outbreak. This change in the companies' working capital management will be examined in much more detail using a paired-sample t-test to determine whether or not it was significant. The descriptive statistics are presented in Table 1.

Table 1. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
ROA_PRECOVID	180	-4.7987	0.2828	-0.0320	0.4092
ROA_COVID	180	-4.7670	0.5343	-0.0523	0.4148
ROE_PRECOVID	180	-6.7911	3.3862	0.0041	0.6055
ROE_COVID	180	-6.0882	0.6190	-0.0884	0.5568
CCC_PRECOVID	180	-4981.70	1710.19	91.59	496.23
CCC_COVID	180	-9758.41	8661.18	60.22	1205.08
WCR_PRECOVID	180	-13.2508	2.2466	0.1076	1.1967
WCR_COVID	180	-35.1570	9.0206	-0.2477	3.3697
NLB_PRECOVID	180	-36.2568	0.4316	-0.9112	3.4116
NLB_COVID	180	-38.6458	0.5843	-1.7651	6.1102
OCF_PRECOVID	180	-1.5360	0.5121	0.0052	0.2032
OCF_COVID	180	-0.9770	1.8210	0.0494	0.2200

Source: Data processed (2022).

4.2. Result and Discussion

Paired-sample t-test was conducted to examine whether or not the differences in working capital management before and during the COVID-19 pandemic were significant. In general, profitability (proxied by ROA and ROE) and working capital management (proxied by CCC and WCR) were not significantly different in both time periods. The results of the study showed that the research hypotheses were not supported, except for the Net Liquid Balance (NLB) and Operating Cash Flow (OCF) variables. This suggests that the COVID-19 pandemic does not affect the working capital management of the listed retail companies. The results of the paired-sample t-test are summarised in Table 2 below.

Table 2. Paired-Sample T-Test Results

Paired Sample Test	Sig. (2-tailed)	Difference in Means
ROA_PRECOVID - ROA_COVID	0.616	Not Significant
ROE_PRECOVID - ROE_COVID	0.116	Not Significant
CCC_PRECOVID - CCC_COVID	0.708	Not Significant
WCR_PRECOVID - WCR_COVID	0.123	Not Significant
NLB_PRECOVID - NLB_COVID	0.003	Significant
OCF_PRECOVID - OCF_COVID	0.039	Significant

Source: Data processed (2022).

First, the results of the paired-sample t-test showed that, although the mean profitability of retail companies declined during the pandemic, this statistical decline is not significant. This is shown by the significance values of the test of 0.616 and 0.116 for Return on Assets (ROA) and Return on Equity (ROE), respectively, which are greater than 0.05. This may suggest that during the pandemic, most businesses are taking action to save their costs, avoiding expansion, preserving their funds, and going for cost-cutting to protect their hard-earned cash.

Second, the significance value of the Cash Conversion Cycle (CCC) of 0.708, which is greater than 0.05, indicates no significant impact of the COVID-19 pandemic on the retail companies' working capital management. Despite the fact that the firms need less days to convert their resources into cash holdings during the pandemic, the difference is not statistically significant. Therefore, the hypothesis is not supported. This result is confirmed using the alternative measure of CCC, which is the Working Capital Requirement (WCR). The significance value of the paired sample t-test for WCR was 0.123, which is greater than 0.05, indicating that the research hypothesis is not supported. Although the Indonesian government banned or restricted retail companies from running their business during the lockdown, most of them sold their products online. This allowed them to serve their customers continuously. WCR is initiated when cash is put in working capital components until it generates cash return in the short term or less than a year. The findings indicated that the firms could still meet their maturing obligations before and during the COVID-19 pandemic, suggesting that the managers of Indonesian retail companies were able to manage their working capital prudently.

Nevertheless, the significance values for Net Liquid Balance (NLB) and Operating Cash Flow (OCF) variables were 0.003 and 0.039, respectively, thus indicating significant differences in means. The significantly lower NLB of retail companies during the COVID-19 (an average of -1.7651, compared to -0.9112 before the pandemic) may be explained by the relatively lower amounts of short-term investments or relatively higher short-term debts that the companies had due to emergency situation and immediate cash needs. This immediate need for cash during the social distancing and lockdown policy was confirmed by the significant increase in Operating Cash Flow (OCF). Operating cash flow measures the difference between cash inflows and cash outflows of a company's operating activities. Therefore, it is often considered the essential part of the firm's cash flow statement. This may result from the strategy that the companies adopted during the pandemic, namely reducing the scale of business operations by firing some employees and intensively selling their merchandise through online platforms. These changes (i.e., online shopping and online communication with customers) have presented many companies with a great opportunity in the midst of challenges and difficulties, which these businesses have duly cashed. Therefore, OCF ratios increased from an average of 0.0052 before the pandemic to 0.0494 during the outbreak.

In general, these results may be caused by the fact that in order to survive during the COVID-19 pandemic, many retail businesses changed their way of doing business from the conventional way, such as selling products or services through physical stores, to online business (Zaitun & Juliyanto, 2022). Although many businesses have been forced to close due to the COVID-19 pandemic and the resulting great disruptions in global commerce (Rababah et al., 2020), Indonesian

retail enterprises have managed to survive. As retail firms were forced to close during the imposed social distancing and lockdown policy, many of these firms have started to use social media and online-business platforms to promote their products and to carry out their sales transactions. This rapid spread of online businesses has allowed retail companies to reduce their levels of inventory, shorten the average collection period, cut expenditures, and eventually increase their operating cash flows during the COVID-19 pandemic. Therefore, the pandemic may have brought an impact on the working capital management of these companies, namely shorter CCC and lower WCR, but the impact was not statistically significant. The pandemic, however, may have caused the companies to raise cash fast (e.g., by selling their short-term investments or borrowing the money), given the situation's urgency, as indicated by the significantly lower NLB and higher OCF.

5. CONCLUSION

The present study aims to examine the impact of the COVID-19 pandemic on the working capital management of Indonesian retail companies, measured by cash conversion cycle (CCC) and working capital requirement (WCR), net liquid balance (NLB), and operating cash flow ratio (OCF). The results of this study showed that all hypotheses were not supported except for NLB and OCF variables. This means that the pandemic may have brought an impact on retail companies, such as shorter CCC and lower WCR, but the effect is not statistically significant. The logical explanation for this result is that, as many retail firms were forced to close during the imposed social distancing and lockdown policy, many of these firms have started to use social media and online-business platforms to promote their products and to carry out their sales transactions. This has allowed retail companies to reduce their levels of inventory, shorten the average collection period, and cut expenditures during the COVID-19 pandemic. Meanwhile, the significant decrease of NLB and significant increase of OCF may indicate the immediate need for cash the retail companies during the emergency situation and uncertainties.

The major limitation of this study is that it does not measure the COVID-19 exposure of each company due to a lack of data. Therefore, it is recommended that future research may also examine the exposure of each sample company to gain a more comprehensive picture of the effect of the COVID-19 pandemic on retail companies' working capital management.

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