# Liquidity and Profitability of Retail Companies: Evidence from Indonesia



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Received 12 June 2023
Revised 30 June 2023
Accepted 5 July 2023

**Abstract**

This study aims to examine effect of liquidity on profitability of publicly listed retail companies on the Indonesian Stock Exchange (IDX). This study uses firm size and Working Capital Management (WCM) efficiency as control variables. The sample in this study consisted of 15 publicly listed retail companies in the period of 2014-2019. All variables are measured by a ratio scale. Profitability is proxied by return on assets. Data was analyzed with panel data regression using a fixed effect model. This study shows that liquidity has a positive and significant effect on profitability when measured using the current ratio. In addition, company size has a significant positive effect on profitability. A higher composition of current assets to current liability improves profitability. On the other hand, Cash Conversion Cycle (CCC) as a proxy of WCM efficiency has a significant negative correlation with profitability. This research findings contribute to understanding of the impact of liquidity, firm size and CCC on profitability in retail industry.

**Keywords**: Profitability; liquidity; firm size; retail company; emerging market.

## Introduction

Profitability is one of firm's main purpose viewing from the shareholder perspective, although nowadays other stakeholders' interest also being valuable for firm's sustainability. Profitability is a company's ability to produce profit. It can also be interpreted as income remains after substracting company's revenue with expenses during an accounting period. Profitability will reflect the overall success and effectiveness of a companiy in managing its performance. Profitability is affected by various factors, one of them is liquidity.

Liquidity demonstrates a firm's ability to fullfil its short-term obligations. It is measured using financial ratios, for example current ratio, cash ratio, quick ratio. A firm with adequate liquidity can meet its short-term obligations using its current assets (cash, inventory, receivables) can. Moreover, the company can utilize the liquidity to take or capture potential opportunities that can increase profitability.

The importance of liquidity is also evident when considering the impact stemming from a company's inability to fulfill short-term obligations. A firm's inability to pay its creditors can be caused by several factors. Firstly, because the company has no cash at all. Secondly, the company has cash, but less than the total current liabilities. A low level of liquidity could lead the firm to sell its investment and fixed assets, or in a worse scenario, lead to bankruptcy. For example, in 2021, Centro, a modern fashion retailer, closed its business due to unability to fulfill its obligations to creditors (Novika, 2021).

Retail business essentially is trading in nature, it functions as an intermediary to distribute products from distributors / manufacturer to end customers. In addition to being a distribution institution for producers, retail also plays an important role for Indonesia in terms of creating jobs and contributing greatly to the national economy. In Indonesia, retail industry contributed to over ten per cent to Gross Domestic Products (GDP) in third quarter

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IJOBP

International Journal of Organizational Behavior and Policy
Vol. 2, No. 2, July 2023
pp. 77-86
Department Accounting, UKP
eISSN 2961-9548
DOI 10.9744/ijobp.2.2.77-86

of 2020 (Gareta, 2020). It is crucial to pay attention to the factors driving profitability to support the right strategy for the firm's sustainability. Retailers do not only sell products but also interact with their customers. Some consumers still prefer the experience of shopping but also assuring product quality themselves for example, when dealing with not reputable products. In its development, the retail industry in Indonesia is being transformed from traditional to modern business, for example with shopping mall concept. Therefore, modern retail provides air-conditioned shopping space to give better experience, this consequently affetcs profitability. Rapid development and globalisation triggers companies to compete to maintain their existence in the business.

Extant literature has investigated the effect of liquidity and profitability. For example, Camino-Mogro and Bermúdez-Barrezueta (2019), Lim and Rokhim (2020), Nanda and Panda (2018) report a positive relationship between liquidity to profitability. Conversely, Alsharari and Alhmoud (2019), Mohanty and Mehrotra (2018), found negative relationships of liquidity and profitability. Alarussi and Alhaderi (2018) show insignificant results regarding the effect of liquidity towards profitability. Research has been conducted in Jordan (Alsharari and Alhmoud, 2019), Ecuador (Camino-Mogro and Bermúdez-Barrezueta, 2019), India (Nanda and Panda, 2018; Mohanty and Mehrotra, 2018), China (Alarussi and Gao, 2021), Indonesia (Lim and Rokhim, 2020).

Some studies of liquidity and profitability in retail such as in South Africa (Louw et al., 2022), Indonesia (Rizky and Mayasari). To our limited knowledge, not many recent studies examining liquidity and profitability in retail industry in Indonesia hence its relationship is unknown. This lack of study and inconclusive relationship between liquidity and profitability motivate us to conduct research on the retail industry because of the role of retail industries in supporting economic activities and fulfilling consumer needs (ekon.go.id). This study aims to examine the effect of liquidity, using the current ratio as a measurement, on profitability in Indonesian retail industry.

This study extends extand literature of determinant of profitability of retail companies in emerging market. This study is important for managers by providing insights on factors influencing profitability of retail firms.

## Literature Review

### *Profitability*

Profitability is one of firm performance that demonstrates a firm ability to generate profit. It is the excess after deducting costs from revenue (Jolly Cyril and Singla, 2020), which is essential for firm sustainability. It is also known as a ratio to assess management effectiveness related to its investment. Profitability can be measured by Return on Assets (ROA), Gross Profit Margin (GPM), Return on Equity (ROE), Earning Per Share (EPS). This research employes ROA, calculated as net income to total assets, to measure a company's ability in utilizing its assets to generate profits. ROA was chosen since it is one of the most common measurements of profitability. A high value of ROA indicates that a company can efficiently manage its assets and therefore be able to produce high income, while a negative ROA indicates loss suffered by a firm.

### *Liquidity*

Liquidity is a firm's ability to meet its short-term liability using current assets, and to cover unexepected needs (Hossain and Alam, 2019). It also refers to the amount of liquid assets or cash firm has (Samo and Murad, 2019). Current assets have characteristics that is easy to be

converted into cash (Zuhroh, 2019). Liquidity can be measured by different accounting ratios, for examples net trade cycle (NTC) (Prasad et al., 2019), current ratio, quick ratio, acid ratio, cash ratio, and net liquid balance (NLB). This study uses current ratio as a proxy of liquidity, which is denoted by the proportion of current assets to current liabilities. Current ratio greater than 1 suggests that a firm's current assets are greater than its current liability, demonstrating the firm can meet its short-term obligations, thus the greater current ratio is better. Having enough liquidity will prevent the firm from financial distress (Chiaramonte and Casu, 2017). However, too liquid or holding too much cash could also be perceived unfavorably as firm being not stable (Calcagnini et al. 2020).

***Liquidity and Profitability***

Extant literature has examined determinants of profitability. Alsharari and Alhmoud (2019) investigated determinants of profitablity using 28 Sharia-compliant institutions in Jordan from the period of 2013 to 2015 found that that leverage has negative impact on profitability, while liquidity and firm size showed insignificant effects on profitability. Using 67 firms in Indian real estate, industrial construction, and infrastructure firms Jolly Cyril and Singla (2020) examined determinants of profitability. Their result showed that liquidity, firm size, and leverage had an insignificant impact on profitability.

Study by Lim and Rokhim (2020) examined determinants of profitability in Indonesian pharmaceutical firms for the periof of 2014 to 2018. The results of analyzing 10 pharmaceutical companies showed that liquidity, sustainable growth rate, firm size and market power had a positive impact on profitability. Using sample of 100 listed non-financial firms in China from 2017 to 2019 Alarussi and Gao (2021) documented that firm size, working capital, leverage, intangible assets had enhanced profitabilty while liquidity had negative effect on firm profitability. Camino-Mogro and Bermúdez-Barrezueta (2019) investigated profitability determinants of insurance companies in Ecuador. Data were collected from 67 life and non-life insurance companies and their results imply that liquidity is hast not significant effect in life insurance company, while it has positive significant effect to profitability in non-life insurance sector.

With a low level of liquidity, the company's profitability may decrease. This is because when a company must fulfill its obligations, but its cash is not sufficient to do so, the company will rely on other external borrowing which has interest, and this reduces its profit. In the event the company does not have sufficient cash when the obligations are due, the company needs to sell investments and non-current assets to pay off obligations. Nanda and Panda (2018) stated that a low level of liquidity in a business can lower its earning power because of higher loan requirements, this affects lower profitability. Liquidity can have a positive effect on profitability in the long and medium term (Nanda and Panda, 2018). Having good or adequate liquidity can increase profitability. Companies can use liquidity to take potential opportunities that can increase company profitability when there is uncertainty in the business environment. Most of the prior literature reports a positive impact of liquidity on profitabiility (Samo and Murad, 2019; Lim and Rokhim, 2020; Işık, 2017). However, few studies document a negative effect of liquidity on profitability (Alsharari and Alhmoud, 2019, or insignificant effect (Jolly Cyril and Singla, 2020). Based on above explanation, the following hypothesis is developed:

**$H_1$:** Liquidity has a positive impact on profitability in retail companies.

***Control Variabel***

Firm size is used as one of the control variables of profitability since it has been evidenced as a determinant of profitability. Common measurements of firm size include total assets,

total sales, or total number of employees. In this research, we use natural logaritm of total assets as proxy of firm size. Firms with larger sizes have a larger market share thus possess larger prospects to create profit. They also have more resources to compete in the market (Rahman and Yilun, 2021). Moreover, they have advantage of economies of scale thus have higher profitability compared to smaller firms. Most studies confirmed the positive effect of firm size on profitability (Lim and Rokhim, 2020; Nanda and Panda, 2018). However, a study documented negative effect of size on profitability, the greater the size, it become less efficient thus lower its profitability (Yadav et al., 2022). In addition, few studies proved insignificant effect (Bolarinwa et al., 2021; Jolly Cyril and Singla, 2020; Samo and Murad, 2019). In this study, firm size is expected to positively affect profitability.

In addition to firm size, we use WCM efficiency as a control variable. Efficient WCM is recognized as a crucial element of financial management in all forms of organizations (Louw et al., 2022). WCM efficiency is measured by Cash Conversion Cycle (CCC). CCC is unique since it captures production process and operation mode, reflecting technology utilised (Wang, 2019). CCC represents the period between cash disbursed for payment of accounts payable and receipt of cash from collection of receivables. It is measured by summing average days inventory outstanding (DIO), days of average sales outstanding (DSO), and average days payable outstanding (DPO). A negative CCC suggests that DPO is longer than sum of DIO and DSO. Firms with a longer CCC days require higher working capital, which raises financial costs and thus dimishes profitability. We expect that CCC will have a negative effect on profitability (Le, 2019; Alarussi and Gao, 2021; Chang, 2018; Fernández-López et al., 2020).

## Methodology

This study investigates the association of liquidity to profitability, where ROA is dependent variable; CR is independent variable; and firm size and CCC are control variables. The research model can be seen in Figure 1.

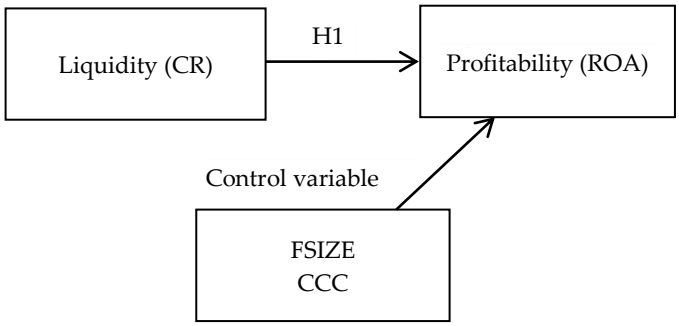


**Figure 1**. Research Model

To examine effec of liquidity to profitability, the panel regression model is developed as follows:

$$ROA_{i,t} = \alpha + \beta_1 CR_{i,t} + \beta_2 FSIZE_{i,t} + \beta_3 WCM_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where:

$\propto$ = regression constant
$\beta_1$ - $\beta_3$ = regression coefficients
$ROA_{it}$ = Return on Assets of firm i at year t
$CR_{it}$ = Current Ratio of firm i at year t
$FSIZE_{it}$ = Firm Size of firm i at year t
$WCM_{it}$ = Working Capital Management efficiency of firm i at year t
$\varepsilon$ = error term

### *Description of Population and Sample*

The population of this study is retail companies listed in the IDX totaling 31 companies. Retail companies here cover grocery retailers, retailers of electronics. The purposive sampling technique is employed to draw sample with criterion: 1) company's financial statements end on December 31, this to ensure that the sample does not contain partial reporting period; 2) have complete data on variables observed during 2014 to 2019. The result was 15 retail companies with a total of 90 observations as shown in Table 1.

**Tabel 1**. Population and Sampling

| Sampling Criterion | Total |
|---|---|
| Total retail companies in IDX | 31 |
| Firms listed after 2014 | (14) |
| Firms with no complete data on variables examined | (2) |
| Sampled firms | 15 |
| Number of years observed | 6 |
| Total observations | 90 |

Data used is quantitative nature in the form of secondary data. Data is collected from the Bloomberg database, with some data being hand collected from firms' annual reports to minimise incomplete data. Data is sourced from statements of financial position and statements of profit and loss. Data is derived from the elements of total assets, net income, total current assets, total short-term liabilities, inventory, receivables, accounts payable, COGS, and sales revenue for the period of 2014 to 2019 when the Covid-19 pandemic had not yet occurred.

### *Operational Definition of Variables*

**Table 2**. Variables Operationalization

| Variables | | Measurement | References | Expected Sign |
|---|---|---|---|---|
| *Dependent* | | | | |
| Profitability | ROA | Net income to total assets | Jolly Cyril and Singla (2020); Alarussi and Gao (2021) | N/A |
| *Independent* | | | | |
| Current Ratio | CR | Current assets to current liabilities | Alsharari and Alhmoud (2019) | (+) |
| *Control* | | | | |
| Firm size | FSIZE | Natural logarithm of total assets | Hatane et al. (2022) | (+) |
| Working Capital Management | CCC | $CCC = DIO + DSO - DPO$<br>$DIO = \frac{\text{Average Inventory}}{\text{COGS}} \times 365$<br>$DSO = \frac{\text{Average Accounts Receivable}}{\text{Sales}} \times 365$<br>$DPO = \frac{\text{Average Accounts Payable}}{\text{COGS}} \times 365$ | Wang (2019); Sany et al. (2023) | (-) |

### *Data Analysis Technique*

To test the hypothesis, we use panel data regression to analysis the impact of liquidity on profitability. In sequential steps, descriptive statistics is analyzed, followed by performing panel specification test to select the best model fitted, namely common effect model (CEM),

fixed effect model (FEM), or random effect model (REM). Chow test, Hausman test and Langrange Multiplier (LM) test will be used to determine the best model. Firstly, the Chow test is used to determine the best model between common effect model (CEM) or fixed effect model (FEM). If p-value < 0,05, then the best model is FEM, otherwise CEM. When the Chow test result is CEM, Hausman test is performed to choose the best model between FEM or REM. When p-value <0.05 then the best model is FEM, otherwise REM. But when Chow test shows CEM as the best model then it is followed by LM test to determine the best model between CEM or REM. If p-value <0.05, then the best model is *REM*, otherwise CEM.

Upon choosing the best model, data is checked its classicial assumption on heteroscedasticity and multicollinearity. When heteroscedasticity test's *p*-value is less than 0.05 then there is a heteroscedasticity problem, otherwise homoscedasticity. When Variance inflation factor (VIF) of multicollinearity test is more than 10 suggesting multicollinearity problem. It means that there are correlations among independent variables.

## Analysis and Discussion

### *Descriptive Statistics*

Table 3 reports descriptive statisctics of sample variables examined. The mean (median) of ROA 4.86 (3.78) indicates that sampled retail firms can generate an average net income 4.86 times than its total assets. ROA maximum score is 48.78 derived from LPPF in 2015, the minimum value obtained from TELE in 2019 is –98.58. A negative ROA demonstrating the firm suffered a loss. The mean (median) of CR is 2.35 (1.33) means that on average observed firms have current assets 2.35 times their short-term liabilities. A minimum score CR is 0.31 (TELE in 2019), while the maximum CR is 14.03 from ECII in 2015. The mean of natural logaritm of total assets is 29.01, the minimum score is 27.01 (KOIN in 2014), and the maximum is 30.81 (AMRT in 2019). Lastly, the average CCC is 38.18 days, which means that on average it takes 38.18 days for retail companies observed to convert its investment in inventory, accounts receivable and accounts payable into cash from sales. Minimum value of CCC is –59,162 (LPPF in 2017), indicating that the firm has longer average accounts payables days compared to sum of its average inventory outstanding days and accounts receivable outstanding days, suggesting that firm is selling in cash and have portion of consignment inventory. The longest CCC is 209.02 days belonging to ACES in 2019.

The panel specification test in Table 4 shows that FEM is chosen since two of the three tests resulted in FEM. The Heteroscedasticity test result in Table 4 shows the model is free from heteroscedasticity issue. VIF value of multikolinearity test results are less than 10 as shown in Table 5 indicating that the model is free from multicollinearity issues.

Table 5 indicates that ROA as dependent variable has $R^2$ of 26.25%. It means that variability of profitability (ROA) is explained by independent variables (liquidity, firm size and CCC) by 26.25%, the remaining 73.75% comes from variables other than independent variables.

**Tabel 3**. Descriptive Statistics

| Variable | Mean | Median | Minimum | Maximum | SD |
|---|---|---|---|---|---|
| ROA | 4,86 | 3,78 | -98,58 | 48,78 | 15,60 |
| CR | 2,35 | 1,33 | 0,31 | 14,03 | 2,36 |
| FSIZE | 29,01 | 29,22 | 27,01 | 30,81 | 0,94 |
| CCC | 38,18 | 25,15 | -59,16 | 209,02 | 56,55 |
| n = 90 | | | | | |

**Table 4** Summary of Panel Specification Tests

| | ROA p-values | Result |
|---|---|---|
| Chow test | 7.03217e-010 | Fixed effect model |
| Hausman test | 0.0105157 | Fixed effect model |
| Heteroscedasticity test | 0.139683 | No heteroscedasticity problem |

**Table 5** Fixed Effect Model of ROA

| | Coefficient | Std. error | *p*-value | Collinearity (VIF) |
|---|---|---|---|---|
| Constant | - 586.209 | 167.506 | 0.0008 *** | |
| CR | 3.972 | 1.353 | 0.0045 *** | 1.579 |
| FSIZE | 20.360 | 5.788 | 0.0386 ** | 1.566 |
| CCC | -0.231 | 0.109 | 0.0008 *** | 1.077 |
| Within R-squared | | 0.2625 | | There is no collinearity |
| *p*-value (F) | | 1.09e-09 | | issue |

*N = 90*

Note(s): ***, **, * is significant at the level 1%, 5% and 10%, respectively

Table 5 shows fixed model of ROA. The results show that CR has a significant positive association with RO A ($\beta_1$=3.972, significant at 1%). An increase of almost one time of CR will increase ROA by almost 4% of ROA. The results show importance for Indonesian retails firms to managet its liquidity ratio to enhance profitability. Further, results portray signification and positive relationship between firm size to ROA ($\beta_2$=20.360, significant at 5%). Lastly, it shows a negative and signification association between CCC and ROA ($\beta_3$=-0.231, significant at 1%).

***Discussion***

The anaysis results show that liquidity is positive and significantly affects profitability. Therefore, H1 stating that liquidity has a positive effect on profitability is accepted. The results showed the importance of CR to increase the firm's ROA. By having adequate liquidity, companies can seize opportunities or potential opportunities when there is uncertainty in the business environment leading to increasing profitability. The opposite is true, a low or inssuficient liquidity level can reduce a firm's profitability. When the company does not have enough cash to meet its short-term obligations then it must sell its investments or fixed assets to pay obligations which cause to lower capacity in generating profit. Moreover, when the firm sourcing its finance from debt, it incurs interest that will lower profitability. The result is in line with Nanda and Panda (2018), Lim and Rokhim (2020), Samo and Murad (2019) which proved that liquidity has a positive effect on profitability.

In relation to control variable, firm size has positive and statistically significant impact to profitability. The results indicate that large firms benefited from economies of scales. This will reduce the cost of purchase by gaining discounts from procuring in large sizes and eventually leads to higher profitability. This is consistent with previous studies (Nanda and Panda, 2018; Lim and Rokhim, 2020) that found firm size is positvely affecting profitability.

Our results show that CCC has a negative and significant effect on profitability. This suggests that the shorter CCC will enhance profitability. To lower CCC one can shorten DIO and DSO and lengthen DPO. The shorter CCC days means shorter inventory on hand, shorter days of receivable collections, and longer days to pay suppliers. These results have been supported by previous research by (Le, 2019; Alarussi and Gao, 2021; Chang, 2018)

## Conclusions and Recommendations

This research was conducted on 15 listed retail companies on the IDX between 2014 and 2019 with a total of 90 observations. This study aims to determine the effect of liquidity on profitability. Two control variables used in this study, namely firm size and WCM efficiency (measured by CCC). Balanced panel data was analyzed utilizing panel data regression using a fixed effect model.

The empirical results show that liquidity, firm size and WCM efficiency affect profitability of retail companies studied, and both independent and control variables are important in driving profitability. The higher the company's current ratio, the larger the firm's size and the shorter CCC days will enhance the firm's profitability.

Managers in retail companies can improve a firm's profitability by managing important factors driving liquidity. It is crucial to monitor liquidity by looking at the adequacy of current assets in relation to current liabilities to ensure smooth operation and relationships with suppliers and other creditors. Having enough cash to pay suppliers ensures continuity of products being supplied, this impacts on availability of products that leads to higher profitability. For control variables, management can consider merging or acquiring other retailers to increase firm size thus obtaining economies of scales. Another important aspect is lowering CCC days which can be achieved by shortening average inventory and receivable days. Secondly, is to negotiate on extending credit terms from suppliers, since trade credit is a source of external financing (Laughlin, 1980).

This research is not free from limitations. Firstly, this research only investigates determinants of profitability of publicly listed retail companies in Indonesia, and due to limited retail firms with complete data only a small size of data was used. This might cause its result not to be generalized to other industries. Secondly, it does not account for the Covid-19 pandemic period.

Future research can extend samples to cover broader sectors and perform comparative analysis on determinants of profitability among different industries. Furthermore, several variables that could be included, for example impact of Covid pandemic on profitability (Li et al., 2021).

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