

A STUDY OF LIQUIDITY AND PROFITABILITY RELATIONSHIP: EVIDENCE FROM INDONESIAN CAPITAL MARKET

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Abstract- Liquidity and profitability are two important aspects of a company's health. The higher the liquidity of a company, the lower the probability that the company could not fulfill its short – term debt. However it means that the funds are confined and couldn't be used for productive activities, hence lowering the profitability. On the contrary, the lower the liquidity of a company, the higher the probability that the company could not fulfill its short – term debt, however it means that the funds could be used for productive activities or investment, hence improving its profitability. According to the risk and return theory which states that the higher the risk, the higher the return and vice versa, the relationship between liquidity and profitability should be a trade – off. However, there have been some studies that gave different results, which indicates there might be a difference in nature of relationship in different sectors and even different industries or countries. This study aims to check the relationship between liquidity and profitability in agriculture and consumer goods sectors in Indonesia between 2005 – 2013, aiming to identify the nature of the relationship and whether the relationship is statistically significant or not. The result is there are negative relationship between liquidity and profitability indicators, in line with the risk and return theory.

Keywords- Liquidity, Profitability, Finance, Management, Risk and Return, Indonesia, Agriculture, Consumer Goods

I. INTRODUCTION

Liquidity and profitability are two important aspects of a company's health. The short – term prospect of a company is judged by its liquidity, because it defines the company's capability to pay its short – term debts (Siegel & Shim, 2000). Liquidity management is really crucial because even though the ultimate goal of a company is to gain profit and maximize the wealth of shareholder, which are indicated by its profitability, if the company could not even fulfill its short – term obligation and survive, generating profit and maximizing its shareholders wealth are out of question. Liquidity management become even more important in times of crisis. According to Eljelly (2004) even in good times, liquidity management is important, and it becomes even more important in troubled times. Even though liquidity is really important to a company, according to Fraser (1998) liquidity and cash management may be financial discipline that are often misunderstood and overlooked. That's why it is important to understand the nature of liquidity and how it actually affects a company's profitability.

Liquidity and profitability are often seen like a different sides of a coin. According to the risk and return theory, which states that the higher the risk, the higher the return and vice versa, profitability and liquidity are not in the same line, meaning that they have an inverse relationship, because the more liquid a company is, it indicates funds are confined to liquid assets, making them inaccessible for productive activities that generate profit or for investments. Moreover, the maintenance cost for all those liquid assets could affect the overall profitability of a company. According to Panigrahi (2014), to maximize shareholders wealth, liquidity and

profitability need to be traded – off. Liquidity is important for the short – term, the more liquid a company is, the lower chance of it being unable to pay its short –term debts. Liquidity is really important for a company's survival. Therefore, a financial manager must find the right balance between liquidity to ensure the survival of a company and also keep profitability maintained in order to give the optimal return for its shareholder (Shin & Soenen, 1998).

However, despite the risk and return theories indicates that the relationship between liquidity and profitability should be negative, there have been studies that produce different results. These findings seems to be really interesting because they indicate that there are different kind of relationship between liquidity and profitability in different industries, and these relationship in different industries might be different in different countries as well. These difference in relationship of liquidity and profitability could lead to a difference in management of the liquidity.

This study will examine the relationship between liquidity and profitability in Agriculture and Consumer Goods sectors in Indonesia between 2005 - 2013. Those two sectors are chosen because they are deemed to be the major and important sectors in Indonesia. As we all know that Indonesia is a tropical country with vast and abundant fertile soil, which make agriculture sector one of the main economy driver in Indonesia. Since the appointment of President Joko Widodo in 2014, the new government has highlighted its target for self – sufficiency in rice in 3 years time. According to Business Monitor International, the target is attainable and realistic enough. Therefore, there's optimism about the future and prospect of agriculture sector in Indonesia, which make it more interesting to be analysed. As for

consumer goods sector, with a population around 250 million people, Indonesia is expected to be new frontier for consumer goods companies. Over the next 15 years, Indonesia is expected to obtain 80 million new consumers, as stated by Euromonitor. It Accounts for around 40 percent of new consumers in ASEAN, over that period (Elkhweet, Felenbok, & Booker, 2014).

This study could be proved useful for financial managers who operate in consumer goods and agriculture sectors in order to understand more about the nature of liquidity in each of the sector, which in the end could affect the liquidity management. The objectives of this study are to describe the relationship between liquidity and profitability in consumer goods and agriculture sectors in Indonesia during period 2015 – 2013, to find out which liquidity variable is statistically significant that affect profitability, and also to provide a recommendation for financial managers in managing liquidity and profitability in consumer goods and agriculture based on the findings.

II. LITERATURE REVIEW

According to the risk and return theory, the higher the return, the higher the risk as well. On the contrary, the lower the risk, the lower the return one will get as well. Meaning that risk and return have a positive relationship. If we link the risk and return theory to the relationship between liquidity and profitability, it also has the similar behavior. The higher the liquidity of a company means that the company will have lower chance of them being unable to fulfill its short – term debt and become bankrupt. Gitman & Zutter (2012) also stated that trade – off between profitability and risk exist, profitability in this context, is revenues and cost generated relationship. While risk is associated with the probability that a company will be unable to fulfill its obligation as they come due and become insolvent.

There have been some studies that investigated about the relationship between liquidity and profitability, both in single company or in industries as a whole. The result, surprisingly varies in different industries and different country as well. They do not always follow the risk and return theory stated above. There are studies that found a positive relationship between liquidity and profitability variables, but there are also studies that found a negative relationship between liquidity and profitability, in line with the risk and return theory.

Eljelly (2004) in his study about liquidity and profitability trade – off : an empirical investigation in an emerging market, found a negative relationship between profitability and liquidity indicators. In his study, he used current ratio and cash gap (cash conversion cycle) as liquidity indicator and net operating income as a profitability indicator. Those

variables were tested using pearson correlation analysis and regression analysis. He also found that current ratio was more important as liquidity measure that affect profitability, however, within sector, cash gap was found to be more important than current ratio in affecting profitability.

Shah (2012) in his study about evaluation of profitability and liquidity relationship through multivariate working capital analysis, found that liquidity and profitability were vital and contradictory aspect of life of business. The research study also indicate that operating cycle period is the variable that should be given more attention than the current ratio and quick ratio as a measure of liquidity.

Vieira (2010), in his study about an exploratory study of airline companies between 2005 – 2008 found a significant positive correlation between liquidity and profitability on the short run, contradicting the main literature about relationship between liquidity and profitability, whereas for the medium run, the relationship was found to be positive. His study was an ex – post facto research.

Alshatti (2014) in his study about the effect of liquidity management on profitability in the Jordanian Commercial Banks during time period 2005 – 2012 found that the increase in quick ratio and the investment ratio affect profitability positively. However, negative effect was found of capital ratio and liquid assets ratio on Jordanian commercial banks profitability. The study used investment ratio, quick ratio, capital ratio, and liquid assets ratio as liquidity indicators, while for the profitability indicator, return on equity and return on asset were used.

Lartey, Antwi, and Boadi (2013), also found a positive relationship in his study about the relationship between liquidity and profitability of listed banks in Ghana, even though the relationship was weak. The profitability indicator used in this study was return on asset (ROA), while the liquidity indicator used was temporary investment ratio (TIR).

Niresh (2012) studied about the trade – off between liquidity and profitability of selected manufacturing firms in Sri Lanka during period 2007 - 2011. The variables used in this study was current ratio, quick ratio, and liquid ratio for liquidity indicators, whereas for profitability indicators the variable used was net profit, return on capital employed, and return on equity (ROE). Using correlation analysis and descriptive statistics, he found that there is no significant relationship between liquidity and profitability among the listed 31 manufacturing firms in Sri Lanka during 2007 – 2011

Nworji and Alayemi (2014), in their study about strategic management of liquidity and its relationship with profitability from the cement industry in Nigeria found that there are significant relationship between liquidity and profitability. Variables used in this study are current assets which is divided into current operating asset and current financing asset and

current liability which is divided into current operating liabilities and current financing liability. To conclude, the studies that found a negative relationship between liquidity and profitability are Eljelly (2014), Shah (2012) and Alshatti (2014), while Vieira (2010), Lartey, Antwi, and Boadi (2013) found a positive relationship between liquidity and profitability.

III. METHODOLOGY

This part consist of explanation about hypothesis, data collection, and method used for data analysis in this study.

3.1. Hypothesis

In order to achieve the objectives of this study, the following hypothesis was made and will be tested in this study:

H0-1 : There is a negative relationship between liquidity and profitability in consumer goods sectors

H1-1 : There is a positive relationship between liquidity and profitability in consumer goods sectors

H0-2 : There is a negative relationship between liquidity and profitability in agriculture sector

H1-2 : There is a positive relationship between liquidity and profitability in agriculture sector

H0-3 : Cash conversion cycle is the liquidity variable that significantly affect profitability

H1-3 : Cash conversion cycle is not the liquidity variable that significantly affect profitability

3.2. Data Collection

The data for this research was collected from the financial report of Indonesian companies. Financial reports are from companies operating in agriculture (11 companies) and consumer goods (27 companies) from 2005 – 2013. The financial report data was requested from Indonesian Stock Exchange (IDX) Bandung (Jl. Veteran 10).

3.3. Model Specification

In order to analyse the relationship between liquidity and profitability in two different sectors (agriculture and consumer goods) in Indonesia between 2005 – 2013. The period of 2005 – 2013 is chosen because of the limitation in availability of data. The following models are built in order to find out the significance of the liquidity variables to the profitability variables:

$$ROE = \beta_0 + \beta_1 CCC + \beta_2 CR + \beta_3 QR + e$$

$$ROA = \beta_0 + \beta_1 CCC + \beta_2 CR + \beta_3 QR + e$$

This research use the following variables:

1. Cash conversion cycle / CCC (liquidity)

According to Gitman & Zutter (2012), CCC measures the length of time required by a firm to convert cash it spent in its operation until the cash is back from its operation.

CCC = average age inventory + average collection period – average payment period

2. Current ratio / CR (liquidity)

According to Gitman & Zutter (2012), CR is the measure of company's ability to meet its short – term debt.

CR = current asset / current liability

3. Quick ratio / QR (liquidity)

According to Gitman & Zutter (2012), QR is similar to current ratio, however the inventory is excluded from the calculation because sometimes there are types of inventory that could not easily sold.

QR = (current asset – inventory) / current liability

IV. RETURN ON ASSET / ROA (PROFITABILITY)

According to Gitman & Zutter (2012), ROA is a measure of company's effectiveness in utilizing its asset in order to generate return.

ROA = earning available for common stockholders / total assets

V. RETURN ON EQUITY / ROE (PROFITABILITY)

According to Gitman & Zutter (2012), ROE is a measure of company's effectiveness in utilizing its stockholders equity in generating return.

ROE = earning available for common stockholders / total equity

3.4 Statistical Test

This research use linear regression analysis (panel data method) and spearman rank correlation analysis. This research use panel data analysis because the study use timespan of 2005 – 2013 with lots of companies each year. The data is strongly balanced. The regression is done in order to identify which variable is statistically significant.

Prior to the regression, Hausman Test is also done in order to determine whether it should use fixed or random effect. Lastly, the spearman rank correlation test is done in order to identify the relationship between profitability and liquidity variables. The spearman rank correlation will determine whether the relationship is strong or weak. DATA ANALYSIS

In this part there will be discussion about the data analysis for consumer goods and agriculture sector separately.

4.1 Agriculture Sector

4.1.1 Regression Analysis (Panel Data)

Regression analysis is done in order to find the association between liquidity and profitability variables, which liquidity variables are statistically significant that affect profitability. Before the regression analysis is done, Hausman Test is conducted in order to determine whether to use fixed effect or random effect. The hausman test (figure 1) showed that this study should use random effect instead of fixed effect (prob>chi2 greater than 0.05).

The regression analysis (figure 2) is done for the ROE model, using robust standard error in order to deal with minor concerns about failure to meet assumptions. From figure 2, it could be seen that cash conversion cycle and current ratio are statistically significant affecting the ROE, with both liquidity variables have $P > |z|$ smaller than 0.05 (0.044 and 0.010 respectively). We could also see that the relationship of cash conversion cycle and current ratio are negative with ROE from the coefficient. Every increase in 1 unit of CCC will decrease ROE by 0.0050574 unit. While every increase in 1 unit of CR will decrease ROE by 0.0012837.

The regression analysis (figure 3) is done for the ROA model. From figure 3, it could be seen that the only liquidity variables which is statistically significant affecting the ROA is current ratio with $p > |z|$ smaller than 0.05 (0.0001). We could also see that the relationship of current ratio is negative with ROA from the coefficient. Every increase in 1 unit of CR will decrease ROA by 0.0003475 unit.

4.1.2 Spearman Rank Correlation

Looking at figure 4, we can see that cash conversion cycle has weak negative correlation with ROA (-0.2803) and very weak negative correlation ROE (-0.1922). We could also see that current ratio has very weak negative correlation with ROE and ROA (-0.0676 and -0.0893 respectively).

4.2 Consumer Goods Sectors

4.2.1 Regression Analysis (Panel Data)

The Hausman Test conducted (figure 5) shows that the appropriate method is to use random effect, with $p > \chi^2$ greater than 0.05 (0.5591).

The regression analysis (figure 6) is done for the ROE model, using robust standard error in order to deal with minor concern about failure to meet assumptions. From figure 6, it could be seen that only cash conversion cycle is statistically significant affecting the ROE ($p > |z|$ smaller than 0.05). It has a negative relationship, with every increase in 1 unit of CCC, it decreases ROE by 0.0017495.

The regression analysis (figure 7) is done for the ROA model, using robust standard error as well. From figure 7, it could be seen that cash conversion cycle is again the only statistically significant liquidity variables, with $p > |z|$ smaller than 0.05 (0.011). Looking at the coefficient, the relationship between CCC and ROA is negative, with every increase in 1 unit of CCC decreases ROA by 0.0005898. The other liquidity variables are not statistically significant.

4.2.2 Spearman Rank Correlation

Looking at figure 8, we could see that cash conversion cycle has a very weak negative relationship with ROA and ROE (-0.0610 and -0.0875 respectively).

Other things to note is the weak positive relationship between current ratio and quick ratio with ROA

(0.2567 and 0.2489 respectively), however they are statistically insignificant.

4.3 Result Summary

There were different results in the two sectors analysed (consumer goods sector and agriculture sector) in terms of which liquidity variables are significant to the profitability variables.

In agriculture sector, liquidity variables that are statistically significant affecting return on equity (ROE) are cash conversion cycle and current ratio. While return on asset (ROA) is statistically significantly affected by only current ratio. After analysing the correlation using spearman rank correlation analysis, the cash conversion cycle has a weak negative correlation with ROE, while current ratio has a very weak negative correlation with ROE. Current ratio also has a very weak negative correlation to ROA.

In consumer goods sector, ROE is significantly affected by cash conversion cycle. While cash conversion cycle is again the only liquidity variable significantly affecting the ROA. Using the spearman rank correlation, it is found that cash conversion cycle has a very weak negative correlation with ROA and ROE.

Looking back again at the hypothesis, we can say that there is no sufficient evidence to reject H0-1 (there are indeed negative relationship between liquidity and profitability in consumer goods sector, however the relationship is proved to be weak. There is no sufficient evidence as well to reject H0-2 (there is also negative relationship between liquidity and profitability in agriculture sector, however the relationship is also proved to be very weak. H0-3 is also doesn't have enough evidence to be rejected, as both in agriculture and consumer goods sector, cash conversion cycle is proved to be the statistically significant affecting the profitability variables. Comparing the result of this study with the previous studies, it could be concluded that the results are most similar to Eljelly (2004).

CONCLUSIONS & RECOMMENDATIONS

This study aimed to answer the questions regarding the nature of relationship between liquidity and profitability in Indonesian market between 2005 - 2013, in this case agriculture and consumer goods sector are the two industry chosen to be analysed.

To conclude the whole paper, it could be said that there is indeed negative relationship between liquidity and profitability in consumer goods and agriculture sectors, even though the relationship is proved to be weak. It could also be said that cash conversion cycle is variable that statistically significant affecting profitability. Although in some cases, current ratio is also significantly affecting profitability.

For recommendation, financial managers who are operating in agriculture sector should pay more attention in managing its cash conversion cycle and

current ratio as needed, because it is proved that cash conversion cycle and current ratio are two liquidity variables that statistically significant affecting profitability in agriculture sector. To improve cash conversion cycle, it is suggested that financial managers should improve its inventory turnover, collect as fast as possible and pay payable as long as possible. Improving relationship with suppliers could also be helpful.

For financial managers who are operating in consumer goods sector, cash conversion cycle is also the liquidity variable which is needed to be paid attention in order to improve profitability. As for future possible studies, the author recommend that researcher should find other variables that might have a stronger relationship with profitability. While liquidity is still important for the survival of the company, it does not seem to be strongly related to profitability in the sectors analysed.

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