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The Relationship between Liquidity Ratios and EPS

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Abstract

The objectives of the study were to calculate and measure liquidity ratios and EPS ratios of public listed companies and to examine the relationship between the liquidity ratios and EPS ratios. The study was empirical in nature. The study was conducted over a period of 5 years for the financial years 2015 to 2019. The study was based on secondary sources of data. Ratios were calculated from the information given in the balance sheet of the companies. Regression was applied to check the relationship between EPS and 3 liquidity ratios. It was concluded that cash ratio has the most influence over EPS compared to current ratio and acid test.

Keywords: Ratio, EPS, Liquidity

Introduction

Liquidity shows the company's ability to pay off or settle its short-term creditors. Liquidity is measured as one of the debt ratios, which is a ratio that measures the percentage of capital requirements spent on debt (Brigham and Houston, 2006). In accordance with the pecking order theory, companies generally prefer using their own funds. Companies with high liquidity would reduce their external funding because the source of their internal funds is high. Extensive research has been done to analyse profitability and capital structure to earnings per share (EPS). The aim of this paper is to analyze the direct influence of liquidity ratios (current ratio, quick ratio and cash ratio) on EPS. The objectives of this study are:

1. To calculate and measure liquidity ratios of eight public listed companies.
2. To calculate and measure EPS ratios of eight public listed companies.
3. To examine the relationship between liquidity ratios and EPS ratios.

Literature Review

Changes in earnings normally used as a tool for evaluating the efficiency of the company's business operations. Normally, it is difficult to predict the future profits of the business. Although management cannot promise the exact amount of profit, they can however estimate how much profit will be gained in the coming year. EPS is a ratio calculated and used by investors to decide whether to purchase, sell or retain their investment in shares. EPS is the percentage of a corporation's profit which is assigned to each individual stock share. It is

a concept that is of great importance to investors and people who trade in the stock market. The greater a company's earnings per share, the higher its profitability would be (The Economic Times, 2020)

$$\text{Earnings per share} = \frac{\text{Earnings after tax}}{\text{No of shares outstanding}}$$

The study (Hamshari, 2020) indicated that there is a direct relationship between the operating cash flows and the return on the stock, and that there are some activities that affect the earnings per share positively. The study recommended that investors and users should focus on data related to cash flows, especially operational cash flows because of its impact on determining the earnings per share and is considered one of the indicators of important financial performance.

The liquidity ratio is a ratio which describes the ability of the company to meet short-term obligations. The definition of 'liquidity' is used to address the company's financial situation. In accordance with Kasmir (2012), the purpose of such ratio is to illustrate or calculate the ability of the company to satisfy due obligations, both to parties outside the company and within the company (as cited in Baraja & Yosya, 2018).

A study was conducted on five companies, in the manufacturing industry and listed in the Jakarta Islamic Index (JII), in the period 2012 – 2016, to determine the relationship between current ratio, EPS and debt to equity ratio. The companies have been selected by way of non-probability sampling technique. The results showed that current ratio does not directly affect earnings per share but current ratio has a direct effect on debt to equity ratio (Darto, 2019).

There are several ratios of liquidity that will be used in this analysis, namely:

- a. **Current Ratio**, a ratio which is the capacity to pay obligations that must be met immediately with current assets, deriving through comparison between the current assets and current liabilities.

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

- b. **Quick Ratio**, a ratio that measures assets that are truly liquid only, i.e., current non-inventory or inventory-reduced assets, relative to current debt. This ratio is a calculating instrument to illustrate the capacity of a company to pay obligations that must be met with more liquid current assets immediately.

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$$

- c. **Cash Ratio**, a ratio which is the result of short-term liabilities divided by cash and cash equivalent. The cash ratio is used to calculate the appropriateness of the money available in a corporation to pay off short-term debt obligations (Fakhrun et al., 2019).

$$\text{Cash Ratio} = \frac{\text{Cash and Cash Equivalents}}{\text{Current Liabilities}}$$

Research Hypotheses

The purpose of this study is to investigate the relationship between earnings per share and liquidity of the companies.

Therefore, according to the purpose of the study, the following research hypotheses underpin the study:

$$H_0: \beta_1 = \beta_2 = \beta_3 = 0$$

Null hypothesis, there is no statistically significant difference or relationship between variables.

H_a : "at least one of the β is not equal to 0"

The alternative hypothesis (H_a) states that there is a statistically significant difference or relationship between variables.

Methodology

Data Collection

The present study is conducted over a period of five years from 2015 to 2019. The study is based on secondary data. The main source of data supporting the research work is annual financial report of eight public listed companies, selected at random. It is assumed that different currencies will not affect the final outcome of the study.

TOOLS USED: Regression by excel

Main data for this study are eight annual financial reports of public listed companies for five consecutive years from 2015 to 2019.

The data retrieved from the annual financial reports of eight companies to perform ratio analysis is reflected below.

Figure 1 - Padini

Year (Y)	Y 2015	Y 2016	Y 2017	Y 2018	Y 2019
EPS (RM)	12.19	20.88	23.92	27.08	24.34
Current Ratio	2.64:1	2.12:1	2.33:1	2.93:1	3.92:1
Acid-test ratio	1.69:1	1.28:1	1.71:1	1.94:1	2.58:1
Cash Ratio	0.78:1	0.76:1	1.34:1	1.72:1	2.29:1

Figure 2 - Maxis

Year	Y 2015	Y 2016	Y 2017	Y 2018	Y 2019
EPS (RM)	0.23/share	0.27/share	0.28/share	0.23/share	0.19/share
Current Ratio	0.59:1	0.50:1	0.63:1	0.59:1	0.51:1
Acid-test ratio	0.58:1	0.50:1	0.63:1	0.58:1	0.51:1
Cash Ratio	0.31	0.17	0.15	0.12	0.10

Figure 3 - Ajinomoto

Year	Y 2015	Y 2016	Y 2017	Y 2018	Y 2019
EPS (RM)	0.489	0.671	3.083	0.925	0.931
Current Ratio	5.40:1	5.55:1	9.74:1	10.70:1	8.12:1
Acid-test ratio	3.89:1	4.41:1	8.39:1	9.48:1	7.33:1
Cash Ratio	2.95	3.47	2.89	3.38	1.89

Figure 4 - Kellogg Company

Year	Y 2015	Y 2016	Y 2017	Y 2018	Y 2019
Current ratio	0.72	0.51	0.67	0.70	0.72
Acid test	0.44	0.30	0.40	0.40	0.46
cash ratio	0.06	0.05	0.06	0.07	0.08
EPS (\$)	1.74	1.98	3.61	3.85	2.81

Figure 5 - Pepsi Company

Year	Y 2015	Y 2016	Y 2017	Y 2018	Y 2019
Current ratio	1.31	1.28	1.51	0.99	0.86
Acid test	1.16	1.15	1.37	0.85	0.70
cash ratio	0.52	0.43	0.52	0.39	0.27
EPS (\$)	3.71	4.39	3.4	8.84	5.23

Figure 6 - General Mills

Year (Y)	Y 2015	Y 2016	Y 2017	Y 2018	Y 2019
Current ratio	0.754	0.785	0.762	0.562	0.591
acid test ratio	0.439	0.503	0.483	0.338	0.371
cash ratio	0.068	0.152	0.144	0.054	0.063
EPS (\$)	2.02	2.83	2.82	3.69	2.92

Figure 7 – Kawan Food Bhd

Year	Y 2015	Y 2016	Y 2017	Y 2018	Y 2019
Current ratio	3.661	3.601	3.170	3.439	3.199
acid test ratio	3.361	3.278	2.802	2.802	2.626
cash ratio	2.568	1.574	1.518	1.072	1.179
EPS (RM)	2.02	2.83	2.82	3.69	2.92

Figure 8 - Apollo Food Holdings

Year (Y)	Y 2015	Y 2016	Y 2017	Y 2018	Y 2019
Current ratio	12.544	13.556	15.589	17.858	15.713
acid test ratio	10.865	12.041	14.039	15.996	14.107
cash ratio	7.732	8.966	10.031	9.342	10.640
EPS (RM)	31.62	37.18	22.29	13.84	21.78

Results

<i>Regression Statistics</i>	
Multiple R	0.752320038
R Square	0.56598544
Adjusted R Square	0.52981756
Standard Error	6.841334198
Observations	40

ANOVA					<i>Significance F</i>
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>F</i>
Regression	3	2197.278333	732.4261	15.64884	1.11937E-06
Residual	36	1684.93873	46.80385		
Total	39	3882.217063			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	5.90193474	1.39819090	4.22112	0.00015	3.06627216	8.7375973
Current ratio	0.12001636	0.06902292	1.73879	0.09061	0.01996861	0.2600013
Acid test ratio	2.49840818	0.84896351	2.94289	0.00566	4.22018598	0.7766304
Cash ratio	5.21555478	1.29936123	4.01393	0.00028	2.58032806	7.8507815

Discussion

Regression analysis has been used to quantify the relationship between the liquidity ratios and EPS.

$H_0: \beta_1 = \beta_2 = \beta_3 = 0$

Null hypothesis, there is no statistically significant difference or relationship between variables.

H_a : "at least one of the β is not equal to 0"

The alternative hypothesis (H_a) states that there is a statistically significant difference or relationship between variables

1. Since the p-value = $1.119373 \times 10^{-6} < 0.05$, we conclude that the regression model is a significantly good fit, yielding evidence that the independent variables have a significant impact on the dependent variables.
2. We reject the null hypothesis
3. Note that the p-value for the coefficient of acid test and cash ratio is lower than 0.05.

4. p-value for the coefficient of current ratio is higher than 0.05, which indicates that it is not statistically significant.
5. Adjusted R-square of 0.5298, adjusted for degree of freedom, means that 53% of the variation in Y, EPS, can be explained by variations in X_1 , X_2 and X_3 , Current ratio, acid test and cash ratio. This is in line with many theories that state that EPS is also influenced by the condition of the economy.
6. Looking at the coefficients, we see that cash ratio has the most positive impact on EPS, this is in line with the theory that states, there is a clear relationship between the cash flows and earnings per share (Ahsan Habib, 2010).
7. Current ratio has a low impact on EPS and acid test has a negative impact on EPS. This is in line with the findings by Riyanti Darto (Darto, 2019)
8. A negative coefficient suggests that as the independent variable increases, the dependent variable tends to decrease.

Conclusion and Recommendations

Ratio analysis is a valuable tool, often used in providing insights into a company's financial picture. The major findings from this study are that, of the three liquidity ratios (current ratio, acid test ratio and cash ratio) cash ratio has the most influence on EPS, followed by current ratio and acid test ratio. We can conclude that, availability of cash is the main determining factor for payment of EPS, compared to any other current assets.

Cash ratio is much more restrictive than current ratio or quick ratio because no other current assets can be used to make payment but only cash. In short, it is purer liquid than quick and current ratio (*Cash Ratio or Cash Coverage Ratio (CCR)*, 2019).

Inventory is also a determining factor in paying out EPS. We see that coefficient of current ratio is positive but when we remove the inventory from current assets (acid test), the coefficient becomes negative.

EPS is one of the ratios investors would seriously consider before making any investment decisions and all public listed companies are required to calculate and present their EPS in their financial statement (Melville, 2019). Inventories are a major part of a company's current assets.

I would recommend that further studies need to be done to determine, the impact of inventories on companies' EPS.

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