

Random Effect Model: Financial Ratios and Performance of Consumer Companies in Malaysia

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Abstract

Purpose: This research is conducted to identify the effect of financial ratios on the performance of consumer industry and the most significant factor contributed to the impact of the performance.

Design/methodology/approach: The data was gathered using Thomson Reuters and evaluated 36 consumer companies listed in Bursa Malaysia Main Board from the year 2004 until 2019. The data then been analysed and has employed random effect model.

Findings: The findings show that the ROA and TAT got significant positive impact on share price while CR, DER and PER are insignificant towards performance of companies.

Research limitations/implications: This study limited to the consumer industry sector in Bursa Malaysia which available for 15 years and used only five independent variables.

Practical implications: Financial specialist, potential investors, top management and future researchers may benefit from this study.

Originality/value: Provide readers a comprehensive view and understanding of the variation in financial ratios and performance of the companies.

Keywords: Financial Ratios, Share Price, Random Effect

Introduction

In the modern era, foreign and local investors are fascinate to invest in stock market due to the development of information technology. Stock or share as an investment instrument has captivated the interest of other class investors as well as demanded by superior investors, due to ease access to the stock market. Stockholder targeted to get higher dividend in their investment as their return on investment in the company. In a stock market, financial information regarding the position of a company is a fundamental element that investors used in making an investment decision. There are many other factors that may affect the stock prices which are the monetary policy, fiscal policy and many other external of factors, regards the information on the financial position and other internal factors.

The financial reporting of a company gives a brief information on the financial status and performance of a company. Investors normally utilized these annual reports to evaluate the overall potential performance and financial position of a company (Anwaar, 2016). Business analyst, existing investors and financial managers are the decision makers in a company which has utilized the financial ratios in order to evaluate the financial performance, as it been traditional yet a powerful tool. Some information can be acquired from the financial statements released by companies in contemplation of estimation the position and capability of companies, which are the income statement, balance sheet and cash flow statement. Performance of companies has been the most identical issue as it shows how perform the companies are for specific of time.

Malaysia's consumer industry is one of the most noticeable sectors recently, as the communication technology expanded, consumer industry grows rapidly because of easy access

of consumer product. This industry serves end user customers as they are closely having transaction as consumer companies serves end products, ready to be used. The performance in the consumer goods sector lays massively on the consumer behavior. The sector will see an increased demand for higher-end products when the economy grows while when the economy diminish, the demand for value products increase.

Problem statement

Financial ratio is the measurement used by a firm to evaluate and clarify its financial position, Bambang Riyanto (2001). As an analytical tool, financial ratios can assist firm in identifying strengths and weaknesses in a firm. Countless previous researchers have conducted study on the financial ratios towards firm performance, taking testimonies from various countries stock exchanges and found various findings regardless the variables used. In Malaysia, there are limited evidences on this area as this study will focus on consumer industry, being the most powerful industry as mentioned in country memo from globalEDGE.msu.edu. This industry is a two-thirds of the volume of trade in the world economy, it plays a vital role in the global economy as it has direct relationship with other industries. It also reported that the industry is the significant source of the gross domestic product (GDP) of many countries, automatically acts as a driver for other industries, especially advertising and retail.

Research objectives

The objectives of this study are to study the significant impact of financial ratios on share price of consumer industry in Malaysia and to identify the most significant factor which contribute to the effect of share price of consumer industry.

Literature Review

Gitman & Zutter (2012) said that the financial ratios being used to compare current to past performance of companies that will enable analyst, investors and shareholders to track the firm's development. Since the share price movement plays an important role to determine the stock returns for every company, indirectly, it also can be captured as a figure to know how well stock market's condition. For this reason, the average stock prices for each consumer companies on Bursa Malaysia is selected to be a proxy to the stock market price as well acts as the dependent variable for this study.

Previous studies have been widely found either in different countries nor different industries regards ratios on the share price. Mohd Suberi et. al (2012) investigated the role of financial management on the performance of construction companies in Malaysia. They aimed on the factors on failure or success of the companies by adapted six medium and Bumiputera contractors for 2004 and 2005. 17 financial ratios been used and found that the companies are insufficient in cash capital and low profit margin as they were highly dependent on debt capital. Hence, those factors affected the performance of the companies where failure in managing the company's capital structure.

Study on the impact of financial ratios on stock price done by Mulyono (2015), found the variables of return on asset and price to book value have a positive influence on stock price. Linkages between financial ratios and stock price was strong as they affected by each other's. Debt to equity ratio and price earnings ratio shown a negative impact on the stock price. He investigating the 139 manufacturing companies in Indonesia Stock Exchange (ISX). The other authors (Asmirantho & Somantri, 2017) studied on the pharmaceutical sub sector companies also listed in ISX. They employed eight samples for five years (2012-2016), and aimed to identify the effect of liquidity, solvency, activity, profitability and market ratio on the share price. From the analysis conducted, researchers concluded that only earnings per share

significantly influenced the share price, while other variables of debt to equity ratio, return on equity, total asset turnover and current ratio are insignificantly affecting the share price.

Lina Hani (2017) studied on the Jordanian banks by taking seven years period (2008-2014), she aimed to identify the effect of the ratios on the stock price. The findings were interpreted by correlation and multi regression method, then summarized that there is a significant impact of the book value per share, dividend yield and dividend per share, on the stock price while price earnings ratio, total asset turnover ratio, market to book ratio and earnings per share were insignificant. Another study conducted by Mohammad Reza et. al (2013) with the purpose to clarify the impact between liquidity ratio and share price of the listed companies on the National Stock Exchange by using correlation. The period of the study was four years which covered 2009 to 2012 for 317 companies. The findings were interpreted by coefficients of correlation and shown a significant relationship between current ratio as represented liquidity ratio and stock price.

A studied done by Siti Nurlaela et. al (2019) on the effect of debt to equity ratio, current ratio and asset turnover on the performance of consumption industry companies in ISX. By using multiples regression analysis, researchers found all the independent variables give significant impact on the stock price. Menaje (2012) intended to examine the effect of financial ratios on stock prices of public listed firms in Philippine by using return on assets and earning per share on stock price. The study covered 50 public listed companies in Philippine, the financial reports extracted from 2009 and were collected from OSIRIS online database. Author used multiple regression method and showed a strong direct relationship between earnings per share and stock price and the model resulted to explained a 73% variation in the stock price of the firms. Based on study done by Umar & Musa (2013) aimed to determine the impact between earning per share and share prices of Nigerian listed. The research consists of the data of 140 Nigerian companies from 2005 to 2009. The findings showed an insignificant impact between the variables. In summary, any increase in earnings per share will not give any impact on the stock prices. Hence, researchers recommended that earnings per share shall not be a predictor to the performance of Nigerian companies. Arsalan et. al (2016) had evidence from Pakistan Stock Exchange by measuring cement sector companies during the period of 2005 to 2015. They found that debt to equity ratio was insignificant with share price while degree of financial leverage and debt ratio are negative in determining the share price.

Theoretical Framework and Hypothesis Development



Figure 1: Theoretical Framework

H₀: There is no significant impact between financial ratios (return on asset, current ratio, debt to equity ratio, total asset turnover and price earnings ratio) and share price.

H₁: There is significant impact between financial ratios (return on asset, current ratio, debt to equity ratio, total asset turnover and price earnings ratio) and share price.

Method

Data sources taken from Thompson Reuters for 36 companies' financial ratios. The sample covers period spans from year 2004 until 2019 with no missing yearly details. The data collected will be analyzed based on the several methods using STATA. The regression test will be applied to test the significant impact of the variables and decide either to employ random effect model or fixed effect model.

$$SPt = \alpha + \beta_1 ROA + \beta_2 CR + \beta_3 DER + \beta_4 TAT + \beta_5 PER + \varepsilon$$

Where,

SPt = Dependent variable which is share price

α = Constant number of equation

β = Regression coefficient

ROA = Return on Asset, profitability ratio

CR = Current ratio, liquidity ratio

DER = Debt Equity ratio, leverage ratio

TAT = Total Asset Turnover, activity ratio

PER = Price Earnings ratio, market ratio

ε = Residual term

Findings

Regression Analysis

Table 1: Pooled Ordinary Least Square (POLLS) Test

Variables	Share price		
	Coefficient	Standard error	P> z
ROA	33.59405	2.548675	0.000
CR	-0.3508766	0.1433829	0.015
DER	1.055375	0.654446	0.108
TAT	2.019759	0.4489219	0.000
PER	0.0167164	0.008583	0.052
c	-1.713632	0.8258578	0.065
R2		0.3877	
Adjusted r2		0.3807	
F-statistic		55.47	
Prob(F-statistic)		0.0000	

Adjusted R-square value indicates 38.07% of the variation in independent variables are able to able the dependent variable, share price. The remaining of 61.93% variance in share price is explained by other variables which are not taken into this study. This model is fit and strong as the shown by the significance value of probability F-statistic. The regression test above interprets that all independent variables are significant at 10% except for DER, only current ratio (CR) has a negative impact on the share price while the others have positive impact on the share price.

Random Effect Analysis

Table 2: Breusch-Pagan Lagrangian Multiplier Test

	Var	Sd=sqrt(Var)
SR	88.13297	9.387916
e	9.760019	3.124103
u	23.09606	4.805837
Prob>chi2	0.0000	

The above test is done for researcher to pick a pools data method or panel data method. Since the probability chi2 presented a significant result, hence researcher rejects null hypothesis then choose a panel data method for continuing this study.

Regression Analysis

Table 3: Random Effects Generalized Lest Square Test

Variables	Share price		
	Coefficient	Standard error	P> z
ROA	7.436234	1.458163	0.000
CR	-0.1060923	0.0835514	0.204
DER	-0.1886604	0.3999875	0.637
TAT	2.225964	0.3829378	0.000
PER	0.0057345	0.0042411	0.176
c	0.2340469	1.047718	0.823
R2	0.3357		
Prob(F-statistic)	0.0000		

The above test is conducted to estimate the random effect of panel data method. It shows that 33.57% of the variation in stock return can be explained by the independent variables, while the rest 66.43% is variation of omission of the other possible variables that are not included in the study. The table explains that only ROA and TAT have significant positive impact on the share price.

Fixed Effect Analysis

Table 4: Hausman Fixed Test

Variables	Coefficient		(b-B) Difference	Sqrt (diag (V_b-v_B)) S.E.
	(b) fixed	(B)		
ROA	6.051997	7.426234	-1.384237	.
CR	-0.0883306	-0.1060923	0.0177616	.
DER	-0.3236051	-0.1886604	-0.1349446	.
TAT	2.042171	2.225964	-0.1837933	0.0656725
PER	0.0053622	0.0057345	-0.0003723	.
Prob>chi2	0.5330			

Hausman fixed test is conducted for researcher to choose a best model for the study, either random effect or fixed effect model. Referring above, the value of probability chi2 is insignificant, therefore researcher rejects null hypothesis and selects random effect as the best model suits with this study.

Discussion and Conclusion

Table 5: Discussion

Explanatory Variables	Coefficient	Result	Supported Authors
ROA	7.436234	Significant	Mulyono (2015)
CR	-0.1060923	Insignificant	Asmirantho & Somantri (2017)
DER	-0.1886604	Insignificant	Arsalan et. Al (2016)
TAT	2.225964	Significant	Siti Nurlaela et. al (2019)
PER	0.0057345	Insignificant	Lina Hani (2017)

Random effect model was selected for this study, hence the above data in Table 5 are retrieved from Table 3 after undergo all tests needed. Hence, the equation of regression logarithm is written as follows:

$$SPt = 0.2341 + 7.4362 ROA - 0.1061 CR - 0.1887 DER + 2.226 TAT + 0.0057 PER + \epsilon$$

Based on the final findings, only ROA and TAT are significant and have positive impact on the share price, as indicated by the p value which is below 1% significance level. By 1% increase in ROA, share price will increase by 7.4362. As ROA is a proxy of profitability ratio, it means that when the company making more profit, the share price will increase as it will positively influence the increment of share price. This result is aligning with the study done by Mulyono (2015) as he also found the same result. For TAT, any 1% increase in TAT will increase the share price by 2.2260. It is due to the utilizing in assets in the operational activities will directly increase the companies' performance. If the companies are efficient in managing their assets, has higher turnover by means has high profit, then it will increase the share price. Siti Nurlaela et. al (2019) supports this finding where she already found the same result in Indonesia. The other independent variables (CR, DER and PER) found to be insignificant with share price of consumer companies, by which any 1% increase in those variables will not give any impact on the share price. However, it is supported by Asmirantho & Somantri (2017), Arsalan et. Al (2016) and Lina Hani (2017).

This study focuses on the factors that give impacts on the share price of the companies in consumer industry for the period of 15 years, covered 36 companies. This study is analyzed up to random effect model as this model is suitable to explains the impact of both independent and dependent variable. All objectives are met as researcher found ROA and TAT are the only factors which have impact on share price, then ROA found to be the most significant factor impacted on the share price. As this paper highlights the companies on consumer industry, it is recommendable for other researchers to use different sample of industries or companies such as services industry, plantation industry, construction, or any companies listed in Bursa Malaysia. Besides that, the period covered should be lengthen for more strong and better result. Except the independent variables used in this study, one should expand the variables and add on more variables to give a different finding. All of these recommendations and suggestions will some sort generate more interesting results.

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