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THE EFFECT OF FINANCIAL LEVERAGES AND MARKET SIZE ON STOCK RETURNS

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Abstract

This paper examines the effect of leverages and market size on stock returns of Malaysian public listed companies. This study attempts to investigate the impact and relationship of financial leverages and market size on stock returns. A random sample of top 19 Malaysian companies based on market capitalisation been selected covering a period from 2010 to 2017. This study focused on stock returns as dependent variable with three independent variables which are debt-to-equity ratio, debt ratio and market size. The methods used included random and fixed effect estimators as well as correlation analysis. The most appropriate model that has been adopted is Random Effect Model. The finding shows that only market size resulted in significant inverse relationship with stock returns, in the other hand, the debt-to-equity and debt ratio show no relationship with stock returns. As for the investors, although the stock market is mainly influenced by economic effects and announcements, the investors can now consider the market size as a factor that will affect the stock returns.

Keywords: Financial leverages, stock returns, market size, panel data, random effect, fixed effect.

1. Introduction

In stock market, the investors invest their money and expect to earn income from the investment. This income is named as 'stock returns' which may be defined as benefits earned from trading of shares or the dividends received from the investment. Gitman (2009) defined that return is the total gain or loss experience on an investment over a given period of time. Stock returns are one of the factor for the investors to make investment in either buying or selling the stocks.

There are some determinants may affect the stock returns. One of the factors is financial leverage which arises from the difference between a company's return on investment in its own assets and the rate at which the company must pay its creditors (Oketch et al., 2018). As definition, financial leverage refers to the impact of changes in the degree to which a company's assets are financed from borrowed funds on returns. Financial leverage reflects the debt amount used in the capital structure of the firm.

While the other factors that can affect the stock returns is market size, which is also known as market capitalization. Several researchers have been made before also using market size as their factor in measure the stock returns. Market capitalization refers to the total market value of a company's outstanding shares. Investors use market capitalization to determine the size of the company, rather than using sales or total asset numbers. Market capitalization also can be a determining factor in some forms of stock valuation. The ability of a company to generate future returns in terms of invested capital can be a determinant to define a successful company. Thus, it is important to analyse the determinants of stock returns to enhance the performance of the companies.

Stock returns have received the attention of many researchers as it is important in a company and a country. A lot of studies been conducted to determine the effect of financial leverages and market size on stock returns. Some studies show a significant result between both financial leverages and market size on stock returns (Acheampong et al., 2014); However, the result is contradicting with Pachori and Totala (2012), where they indicated no relationship between leverages and market size toward stock returns. According to Acheampong et al. (2014), stock returns were the interest of the research and have been analysed by using Empirical Model Specification which is as same as the research by Mustafa et al. (2017). Both results show that stock returns can be affected by financial leverage. However, the research of Acheampong et al. (2014) came out with the result of stock returns can also affect by market size while the result of the research of Mustafa et al. (2017) show that stock returns will not be affect by market size.

Pachori and Totala (2012) exposed that there is not significant influence of financial leverage on stock returns which are same result as the research made by Nirujah (2014). However, different method had been used to examine the financial leverage in this three research, in which Linear Simple Regression is used in the research of Pachori and Totala (2012) while Simple Linear Correlation Model is used by Nirujah (2014) in her research. Besides, financial leverage was measured by debt ratio according to Barasa (2012) and Anas and Laham (2013). However, there was insignificant relationship between debt ratio and stock returns in the research carried out by Barasa (2012); while the study carried out by Anas and Laham (2013) underlines the existence of a statistically significant impact for the debt ratio on the annual return of stocks.

According to Mohanty (2002) who studied on firm-specific characteristics using Fama and Macbeth's approach, size of company and price to book value resulted to have an inverse relationship with

stock return, whereas the other variables, leverage and price-earnings ratio found to have a direct relationship with stock returns. Moreover, the research made by Koluku et al. (2015) proved that in addition to the market size which is an influential factor in determining the stock returns, some other factors including the firm size and market risk would also play an influential role to the stock returns. In the research of Acheampong et al. (2014), market size had been found as one of the factors that can affect stock returns. Market size factor also have been used to analyse the impact on stock returns in the research of Mustafa et al. (2017). Method to determine the market size are different in both research, in which market size was estimated by multiplying the closing stock price by the number of issuance common stocks raised by the firm in the research of Acheampong et al. (2014) while Mustafa et al. (2017) determine size is the proxy of market capitalization of selected sector. However, the researches made by Acheampong et al. (2014) and also Mustafa et al. (2017) came to the same conclusion, that is market size (capitalization) has a critical connection exists between stock returns.

2. Problem Statement

Stock market is an important part of a national economy. It is undeniable that it plays a vital role in supporting a country's economic growth. Therefore, many researchers have emphasized that a country's stock market can serve as an indicator of the country's economic development. Many researchers and investors believe that there is a correlation between financial leverages and market size with stock returns in the stock market. Malaysian government intends to achieve an industrialized economy by the year 2020 as written by Azhar in the Edge of Malaysia. In order to achieve this goal, sustained investment activities and stable stock returns performance in Malaysia companies are parts of the requirements. Besides, The Securities Commission (SC) reported that the market value of the Malaysian stock market contracted 10.8% from RM1.9 trillion in 2017 to RM2.11 million, equivalent to external development. Compared with 2017, the value of local stock investment decreased by RM36.2 billion. This issue emphasized that the importance of carry out this research to encourage investors to invest in stock market and thus increase the market value of Malaysia.

In short, stock markets and returns are closely linked to economic growth. Strong economic growth is always associated with bullish stock performance Thus, controlling the factors that influence the performance of the stock returns in Malaysia companies are very important issues for Malaysian government, investors, fund managers and financial managers.

3. Research Questions

For continuing this research, the research questions that will be conduct in order to get the result are as follow:

1. Does financial leverages and market size have significant relationship with the stock returns of selected stocks listed on Bursa Malaysia?
2. How financial leverages and market size give significant impact towards stock returns of selected stocks listed on Bursa Malaysia?

4. Purpose of the Study

This study aims to achieve the following objectives:

1. To investigate the significant relationship between financial leverages and market size and stock returns of selected stocks listed on Bursa Malaysia.
2. To investigate the significant impact of financial leverages and market size on stock returns of selected stocks listed on Bursa Malaysia

5. Research Methods

This study will be carrying out among 19 companies of 30 top largest companies based on market capitalisation which listed under Bursa Malaysia whereby covering a period of eight years, from 2010 until 2017. Secondary data will be used in this research and all the data will be collected from Bursa Malaysia website since the company chosen is listed in Bursa Malaysia. For any missing data that cannot be found in annual financial report, Thompson Reuters will also be used in order to support any missing data.

5.1. Dependent Variable

Stock returns have been chosen as a dependent variable after it has been found that the importance of stock returns in stock market towards economic growth in Malaysia.

5.2. Independent Variable

Financial leverages estimated by Debt-to-Equity Ratio and Debt Ratio, as well as market size of the overall Malaysian listed companies in Malaysia stock exchange.

5.3. Quantitative Data Analysis

A few methods can be used to analyse the relationship and impact between the financial leverage and market size of selected stocks on stock returns on the Malaysia stock exchange. These methods include Descriptive Analysis, Pearson Correlation Coefficient Test, Ordinary Least Square regression test (OLS), Breusch-Pagan Multipler Test and Hausman Fixed Test.

5.4. Research Hypothesis

H01: There is no relationship between financial leverages and size of selected stocks with stock returns on the Malaysia stock exchange.

H11: There is a relationship between financial leverages and size of selected stocks with stock returns on the Malaysia stock exchange.

H0$_1$: There is no impact between financial leverages and size of selected stocks with stock returns on the Malaysia stock exchange.

H1$_1$: There is an impact between financial leverages and size of selected stocks with stock returns on the Malaysia stock exchange.

5.5. Model Equation

$$R_{it} = \alpha + \beta (DER_{it}) + \beta (DR_{it}) + \beta \ln SIZE_{it} + \varepsilon_{it}$$

Where;

R$_{it}$	=	Appreciation in the adjusted closing stock price divided by the original price.
α	=	Constant.
β	=	Coefficient beta value.
DER	=	Total liabilities divided by total shareholder's equity.
DR	=	Total liabilities divided by total assets.
ln*(SIZE) =		Log of market capitalization.
ε	=	Random error term.

6. Findings

6.1. Descriptive Statistics

Table 01. Descriptive statistics

	Stock Returns	DER	DR	Size
Mean	0.1227	4.5213	0.6090	10.3787
Median	0.0769	1.4996	0.5998	10.3531
Maximum	0.9815	19.9155	0.9522	11.0898
Minimum	-0.3311	0.0496	0.0472	9.0662

Table 01 shows the mean of stock returns (0.1227), debt-to-equity ratio (4.5213), debt ratio (0.6090) and market size (10.3787) were higher than the median of stock returns (0.07688), debt-to-equity ratio (1.4996), debt ratio (0.5998) and market size (10.3531). Hence, the distribution of data is skewed to the right, which the median less than the mean. The minimum amount for stock returns (-0.3311), debt-to-equity ratio (0.04958), debt ratio (0.04723) and market size (9.0662) are the lowest value of the data. While for maximum amount, stock returns (0.9815), debt-to-equity ratio (19.9155), debt ratio (0.9522) and market size (11.0898) are the highest value of the data.

6.2. Correlation of Coefficient Analysis

Table 02. Pearson correlation test

		Stock Returns	DER	DR	Size
Stock Returns	Correlation	1			
	Sig				
DER	Correlation	0.056	1		
	Sig	0.491			
DR	Correlation	0.007	0.835	1	
	Sig	0.932	0.000		
Size	Correlation	-0.437**	0.044	0.111	1
	Sig	0.000	0.592	0.174	

Table 02 above shows only size is significant, hence indicate there is a moderate negative relationship between size and stock returns at 43.7%. Whereas DER and DR, both shows insignificant result regards to stock returns.

6.3. Regression Analysis

Table 03. Pooled Ordinary Least Square (POLS) test

Variables	Stock returns		
	Coefficient	Standard error	P>|Z|
DER	0.0040	0.0054	0.458
DR	-0.0224	0.1047	0.831
Size	-3.1522	0.5207	0.000
_cons	7.4924	1.2130	0.000
R^2	0.2052		
Adj R^2	0.1891		
F-statistic	12.74		
Prob (F-Statistic)	0.0000		

This study has a R2 value of 20.52% which means that financial leverage and market size explained 20.52% of the total variation in stock returns (see Table 03). The remaining of 79.48% variance in stock returns was explained by other variables that are not including in this study. Prob (F-statistic) of this study is 0.000, which is below 1%. This can be concluding that the model is strong and fit as it is significant at 0.000.

6.4. Random Effect Analysis

Table 04. Breusch-Pagan Lagrangian Multiplier test

	Var	sd = sqrt (Var)
Stock returns	0.0439	0.2095
e	0.0299	0.1730
u	0.0068	0.0825
Prob>chi2	0.0017	

Table 04 shows the result of the Breusch-Pagan Multiplier test stated that prob > chi2 is 0.0017 which is below 0.01. So, H_0 will be rejected and this can be concluded that panel data is more appropriate than the pool data.

6.5. Regression Analysis

Table 05. Random Effect Generalized Least Square test

Variables	Stock returns		
	Coefficient	Standard error	P>|Z|
DER	0.0080	0.0073	0.274
DR	-0.0792	0.1459	0.587
Size	-3.3735	0.6778	0.000
_cons	8.0264	1.5768	0.000
R-squared	0.2031		
Prob (F-Statistic)	0.0000		

The above test is to estimate the random effect of panel data. Table 05 shows that R^2 of 20.31% which indicates financial leverage and market size explained 20.31% of the total variation in stock returns. The remaining of 79.69% is due to other variables that are possible to the determinants of stock returns.

6.6. Fixed Effect Analysis

Table 06. Hausman Fixed test

Variables	Coefficient		(b-B) Difference	sqrt (diag (V_b-V_B)) SE
	(b) fixed	**(B)**		
DER	0.0235	0.0080	0.0155	0.0111
DR	-0.1001	-0.0792	-0.0218	0.3243
Size	-3.6312	-3.3735	-0.2577	0.7964
Prob>chi2	0.4035			

The null hypothesis (H_0) will be rejected when the prob > chi2 lower than the significance level, 0.01. In other words, fixed effect model will be the most appropriate method for this study as compared to random effect model (see Table 06).

6.7. Discussion

Table 07. Discussion

Variables	Coefficient	Results	Authors
DER	0.0080	Insignificant	Mustafa et al. (2017)
DR	-0.0792	Insignificant	Nirujah (2014)
Size	-3.3735	Significant	Mohanty (2002)
c	8.0264		

The data in table 07 above are retrieved form Random Effect model (Table 05) as this model has been selected as the most appropriate method in this study after went through some tests. Therefore, the model equation is written as follow:

Stock returns = *8.0264 + 0.0080* DER – *0.0792* DR – *3.3735* Size + ε

Table 07 shows that only one factor will affect stock returns which is market size as it is significant at 0.000. Since there is a negative impact between market size and stock returns, by 1% decrease in market size will increase the stock returns by 3.37%. The null hypothesis, H_0 was rejected this negative significant impact between the market size and stock returns is aligned with past researcher, Mohanty (2002). Naturally, companies with lower market value will have higher risks and thus have higher expectation on stock returns. It is due to small capitalization stocks tend to have lower stock prices, and these lower prices means that price appreciation tends to be larger than large cap stocks and thus there will be higher risk for the small cap companies.

The other independent variables which are debt-to-equity ratio and debt ratio have no significant impact on the stock returns since the p-value is higher than 0.05. This finding is consistent with previous research done by Mustafa et al. (2017) and Nirujah (2014). This can be explained by the fact that there may

be other non-quantitative factors that may cause financial leverage to be ineffective against the effects of stock returns such as recession, competition and government strategy.

7. Conclusion

Random effect model is the best model fitted with this study and researcher has achieved both said objectives by analysed through correlation analysis and regression analysis. Size of the company id found to have a significant negative relationship as well as negative impact on stock returns. Every 1% increase in size will reduce the stock returns by 3.37% while leverages found to be insignificant with stock returns over time.

As for the investors, although the stock market is mainly influenced by economic effects and announcements, the investors can now consider the market size as a factor that will affect the stock returns. The smaller the market size, the greater the stock returns. A better result on this research could be found by employing more sample of study, gather more observation and include more variables such as market risk and systematic risk.

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