

# Size Anomaly, Beta, Return, Momentum in the Indonesia Stock Exchange

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**Submission date:** 26-May-2020 09:43PM (UTC-0700)

**Submission ID:** 1332598788

**File name:** 591-Article\_Text-1041-1-10-20200515-2.pdf (270.52K)

**Word count:** 7373

**Character count:** 38461

# Size Anomaly, Beta, Return, Momentum in the Indonesia Stock Exchange

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## Abstract

This study aims to examine the anomaly size effect in Indonesian capital market. The study was conducted during the period 2010-2018 which had 2,605 observations data. The research model used OLS regression panel data to test the hypotheses. The results support the hypothesis that size, beta, and MTBA affect firm returns. In addition, it was found that small firms produced higher returns compared to big firms. However, the risk of small firms was lower than big firms. The low beta of a small firm shown that the effect of market fluctuations on the fluctuations of stock prices of small firms was low. In addition, it was found that the market to book value of small firms was lower than that of big firms. The low market to book value of small firms indicated that the market valued low small firms but still had a high profit opportunity.

Keywords: Size Anomaly, beta, return, market efficient

## RESEARCH BACKGROUND

Fama (1970) introduces the concept of an efficient market hypothesis in capital market activity activities. There are several phenomena, anomalies that conflict with the efficient market hypothesis. Every investor wants a return (profit) above normal. Investors use various trading strategies, for example, utilizing the anomalies that often occur in the market. The theory of efficient markets was first discovered in a study conducted by Bachelier in 1900 who wanted to find out whether stock prices fluctuated randomly or not. Pearson (1905) introduced the random-walk pattern which it was known as the drunkardwalk concept. In 1953, Kendall first used and introduced the term random-walk in financial literature (Yalcin, 2010). Fama then discussed some empirical evidence that supports the random-walk theory in his doctoral dissertation and pioneered the emergence of the Efficiency Market Hypothesis (EMH) theory in 1970. The EMH theory introduced by Fama became a quite popular theory and was used as a basis in various studies on market anomalies recently.

According to Fama (1970), an efficient capital market is a capital market where the prices of all traded securities reflect the available information. In this case, the information available can include past information, current information, as well as information that is in the form of opinions or rational opinions in circulation which can affect price changes.

Fama (1970) divides market efficiency into three main forms namely; Weak Form Market Efficiency. The market is efficient in a weak form if prices of shares or securities fully reflect past information. Information is past if the information has already occurred. This weak form of market efficiency is closely related to the random walk theory which states that past data cannot be linked to present values. In this way, the past value cannot be used to predict current prices. Market Efficiency Half Strong Form (Semistrong Form). The market can be half-strong efficient

if the prices of stock securities fully reflect all published information (all publicly available information) including information contained in financial statements. Strong Form Market Efficiency. The market can be efficient in a strong form if the prices of stock securities fully reflect all available information including even highly confidential information. If an efficient market in this form does exist, then individual investors or groups of investors get abnormal returns.

This digression of an efficient market concept is often referred to as an efficient market anomaly, because the causes are difficult to explain precisely. Jones (1996) suggested that "Market Anomaly (Market Anomaly) as techniques or strategies that are contrary to the concept of an efficient market".

Jones (1996) defines a market anomaly as a form of strategy or technique, because the results generated by this market anomaly allow investors to get the opportunity to obtain abnormal profits by relying on various events that occur in the capital market. According to Altez (2007), "market anomaly is an exception of rule or model", which means that anomaly is a digression of models or concepts of efficient markets. The support of efficient market anomaly concept is the existence of certain patterns on stock trading days, the opportunity for investors to obtain abnormal profits, the existence of insider trading in the capital market, the existence of information asymmetry and so on.

Levy (1996) in Altez (2007) classifies market anomalies into four types based on event or event characteristics: firm anomaly, seasonal anomaly, event anomaly, and accounting anomaly. According to Levy (1996) there are various kinds of anomalies that have been found on the stock market, for example, anomaly of the firm.

Anomaly Size Effect was first discovered by Banz (1981) in the American capital market and strengthened by Reinganum (1981). Banz found that there was an inverse (negative) relationship between firm size and stock returns which means that small firm stocks will provide a higher return than big firms. Fama and French (1992) in their study stated that the CAPM beta (market risk) is not the only factor explaining the variation in stock returns. In addition, size as measured by Market Value of Equity (ME) and Book to Market Equity (BE / ME) ratio have a significant strength in explaining variations in stock returns.

Fama and French (1992) found that in the period 1963-1990, the role of beta as an explanatory factor for stock returns disappeared. In addition, stocks with small firm equity outperformed large stock returns, known as the size effect phenomenon. On the other hand, stocks of value groups that have a high book to market equity ratio outperformed the returns of stocks from the growth group with low book to market equity ratios. This phenomenon is known as the value effect. Research conducted by Barbee (1996) also shows results that firm size has a negative effect on stock returns and measures the firm size through market value of equity (Market Value Equity-MUE).

Small firm stocks have a tendency to earnings which is lower than the stock of big firms. The size effect in earnings occurs due to the high likelihood of low profits from small firm stocks, especially after the recession in the United States in 1980. In the 1980s, big cap firm had greater annual returns compared to small cap firms.

Among all the anomalies found, the Size Effect occurs mostly in almost all capital markets (Banz, 1981 in America, Lamoureux and Sanger, 1989 in America, Reinganum, 1992 in America, Sehgal and Tripathi, 2004; Prasad and Verma 2013 in India ). Size Effect illustrates the phenomenon that small firms give higher returns than big firms. Therefore, portfolio selection strategies based on Size Effect will provide an outperform return.

The firms size is a value that indicates the firm size. The firm size is usually measured using total assets and market capitalization. The greater total value of assets and market capitalization would lead the greater firm size. More detailed, the greater total assets would lead the more capital invested and the greater the market capitalization would lead the greater firm is known in the community.

Until now, there is still little research in developing capital markets that examines the existence of anomalies of the Size Effect persistently, including in the capital markets in China (Xu, 2002); Sehgal, et al (2014) research in India, Brazil and South Korea, and Pandey and Sehgal (2016) research in India, therefore ,researchers are interested in reexamining the Size Effect anomaly which is still a question in the Indonesian capital market.

Another encouraging thing is that there has not been much research in developing capital markets, especially in Indonesia, which explains the source of the anomaly of the Size Effect by using business risk and financial distress explanations. The small firm is estimated to operate more at risk than the big firm (Pandey and Sehgal (2016), which are caused by several factors. Products have a low level of diversification, less efficient labor, lower bargaining position, lower technology, lower consumer loyalty and labor is less committed, and the risk of operating a small firm is higher, because it has high financial risk due to higher debt costs.

Another explanation is that a small firm is relatively more experiencing financial difficulties as reflected by the Price to Book value (P / B) ratio. Fama and French (1993) used 3 factor models of asset pricing which added variable Size and Value other than Beta. These two factors measure risk (both business risk and financial risk) and measure financial difficulties. The result of this study is expected to confirm the flow of anomaly Size Effect research that could clarify the premise that says the presence or absence of anomaly size effects in the Indonesian capital market. In addition, the result of this study can also be implemented for investors who will invest their funds in the capital market, especially the formation of a portfolio in the small firm group. Specifically this research wants to prove the existence of efficient market anomalies. The efficient market anomaly that will be tested is the anomaly size effect.

## Literature Review and Previous Research

### Firm size and stock return

Anomaly Size Effect was first discovered by Banz (1981) in the American capital market and strengthened by Reinganum (1992). Banz found that there was an inverse (negative) relationship between firm size and stock returns which means that small firm stocks will provide a higher return than big firms. This phenomenon is contrary to the concept of an efficient

market, where there is not a single piece of information that can be used by market participants to get a higher return.

Size anomaly is an anomaly that has been proven universally in several studies abroad (Banz, 1981 in America, Lamoureux and Sanger, 1989 in America, Reinganum, 1992 in America, Sehgal and Tripathi, 2004 and Prasad and Verma, 2013 in India ). By this Size Effect anomaly, market participants can use a portfolio selection strategy consisting of small firm stock to get a higher return (outperform). Conclusion Anomaly Size Effect was also found by Fama and French (1993, 1995, 1996) and Berk (1996), China (Xu, 2002), India (Mohanty, 2001) and other countries universally. Several studies that explain the relationship between firm size and return include, Banz (1981) concludes that the firms with large market capitalization have smaller returns than small market capitalization firms. Lamoureux and Sanger (1989) also concluded that the larger the size of the company, the smaller the abnormal return. Based on the literature review described above as well as previous theories and research, the temporary answers from this research are:

- H<sub>1</sub> The firm size affects the stock returns of firms listed on the Indonesia Stock Exchange
- H<sub>2</sub> The stock returns of small firms are higher than the stock returns of big firms listed on the Indonesia Stock Exchange
- H<sub>3</sub> Beta stock of small firms is higher than beta stock of big firms listed on the Indonesia Stock Exchange
- H<sub>4</sub> The market to book ratio of small firm stock is lower than the market to book ratio of big firm stock listed on the Indonesia Stock Exchange

### Research Methodology

The population in this study was all companies that have gone public on the Indonesia Stock Exchange from 2010 to 2018. The sample in this study was the first and second quantile firms that have gone public on the Indonesia Stock Exchange from 2010 to 2018. The firms that conducted stock split, right issues, mergers and acquisitions were excluded from the samples. The research variables were separated into 2 groups: the dependent variable and the independent variable. In this study, the dependent variable was Stock Return (Y). Return is the result obtained from investment.

(Jogiyanto, 2009). Meanwhile, the independent variable was the firm size as measured by total assets that was a dummy variable. DSIZE = 1, if the sample was included in the issuer group whose total assets were included in the second quintile group. DSIZE = 0, if the sample was included in the group of issuers whose total assets were included in the first quintile group. Market capitalization, was a dummy variable. DSIZE = 1, if the sample was included in the issuer group whose market capitalization value was included in the second quintile group. DSIZE = 0, if the sample was included in the issuer group whose market capitalization was included in the first quintile group Market to Book ratio, Market To Book Ratio was the ratio used to assess financial difficulties. Stock beta is a measure that shows the extent to which a

particular stock returns moving up and down following the stock market (Brigham and Houston, 2010).

The analysis model in this study used multiple linear regression analysis:

$$RET_{i,t} = b_1 + SIZEC_{i,t} + b_2BETA_{i,t} + b_3MTBA_{i,t} + e \dots\dots\dots (1)$$

$$RET_{i,t} = b_1 + DSIZEC_{i,t} + b_2BETA_{i,t} + b_3MTBA_{i,t} + e \dots\dots\dots (2)$$

$$RETS_{small Firm_{i,t}} = b_1 + SIZEC_{i,t} + b_2BETA_{i,t} + b_3MTBA_{i,t} + e \dots\dots\dots (3)$$

$$RET_{Big Firm_{i,t}} = b_1 + SIZEC_{i,t} + b_2BETA_{i,t} + b_3MTBA_{i,t} + e \dots\dots\dots (4)$$

Notes:

- $\alpha$  = A constant
- $b_{1-3}$  = Coefficient of the independent variable
- SIZEC = Firm Size
- DSIZEC = Dummy of firm size where Dummy = 1 if the firm small and Dummy = 0 if big firm
- BETA = Systematic risk of a stock or portfolio
- MTBA = Market To Book Ratio

In analyzing the significant value of the resulting model, various statistical tests were used, namely; adjusted R-Square, F-Test, t-test, and partial correlation coefficient.

1. Performing a t-test of the regression coefficients to explain how an independent variable was statistically partially related to the dependent variable. In this study, it was conducted with a confidence level of 95% ( $\alpha = 5\%$ ).
2. Performing the F test (F-test) to find out the test together the significance of the relationship between the independent variable and the dependent variable. The confidence level used was 95% ( $\alpha = 5\%$ ). The results of the F test calculation was compared with the F-table with  $\alpha = 5\%$ .
3. Partial correlation coefficient was used to assess the sensitivity of the independent variable toward the changes of each independent variable.

## Result

This study used a regression estimation approach to predict the expected return in 2010-2018. Regression estimation used panel data that observes issuers throughout the study period. In this study, the chosen model was the Fixed Effect model. The estimation results of the panel regression model for testing the research hypothesis were presented in table 1,2,3,4

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**Table 1. Hypothesis Testing Results Effect of Firm Size, Stock Beta and Market To Book Ratio Against Firm Return**

Dependent Variable: Stock Return

	Model I			Model II			Model III					
	Coefficient	t-Statistic		Coefficient	t-Statistic		DSIZEC=1		DSIZEC=0			
							Coefficient	t-Statistic	Coefficient	t-Statistic		
C	-3,759	-9,496	***	0,861	12,861	***	-5,763	-10,587	***	-3,175	-4,457	***
SIZEC	0,341	10,708	***	-	-	-	0,582	11,017	***	0,271	5,528	**
DSIZEC	-	-	-	-0,804	-7,976	***	-	-	-	-	-	-
MTBA	0,092	14,828	***	0,099	16,083	***	0,020	1,927	**	0,018	1,966	***
BETA	-0,145	-7,698	***	-0,145	-7,624	***	-0,074	-3,602	***	-0,115	-4,214	***
R <sup>2</sup>	0,267			0,251			0,240		0,639			
Sum squared resid	4628,007			4729,340			1250,659		1640,871			
F-statistic	2,462			2,265			1,420		8,176			
Prob(F-statistic)	0,000			0,000			0,000		0,000			
Durbin-Watson stat	2,153			2,227			2,327		1,990			
N Observations	2,605			2,605			1,300		1,305			

This table presents a regression estimate of company characteristics for returns of 2,605 firms a year. The research variables are: Return = (p1-p0 / p0). Sizec = firm size based on market capital. DSizec = if the sample is included in the issuer group whose market capital is included in the group below the median. DSIZE = 0, if the sample is included in the issuer group whose total assets are included in the issuer group whose market capital is included in the group above the median. Beta is a measure that shows the extent to which a particular stock returns moving up and down following the stock market. Market To Book Ratio is a ratio used to assess financial difficulties. Beta is a measure that shows the extent to which a particular stock returns moving up and down following the stock market. T-statistic values that are heteroscedasticity robust white (1980) are presented in the column after the coefficient, \*\*\* = significant at the 1% level, \*\* = significant at the 5% level, and \* = significant at the 10% level.

Table 1 first column contains explanatory variables and the next column presents the results of the Pooled OLS specification model with the fixed effect model. A summary of the results of the estimated return using the Pooled OLS model assumes that all cross section units face the same conditions, have the same risk and similar investment return preferences. FEM cross-section or period FEM modeling views the data as having unobservable factors that are constant between cross sections and are constant across time series. The Fixed Effect-Likelihood Ratio Test has been done showing that the Pooled OLS specification model is no different from Fixed Effects. The Hausman test results show that the Fixed Effects specification model is better than the random specification model, so the estimation results of the random specification model are not presented.

The regression results show that the SIZEC coefficient is significant and positive in all models. The results of this study confirm the findings of Banz, (1981) in America, Lamoureux and Sanger, (1989) in America, Reinganum, (1992) in America, Sehgal and Tripathi, (2004) and

Prasad and Verma, (2013) in India that SIZE plays an important role in company return. The larger SIZE will invest more funds into growth opportunities. In this study, firm size is positively related to return. The higher the firm size, the higher the firm's return.

BETA coefficient shows a negative and significant coefficient for the entire model. This indicates the coefficient sign that is not in accordance with the prediction that companies with high BETA have a low number of returns. This is contrary to the theory that the higher the risk, the lower the rate of return. Estimation results in this research are in accordance with the results of previous research from Michailidis and Tsoyoglou (2007). This is possible because the time of research from January 2010 to December 2018 is the time when the market in Indonesia is being unstable, resulting in negative results.

The MTBA coefficient is positive and significant across all models. This result shows that the result is in accordance with the prediction that firms with high MTBA cause higher returns. These results support the findings of Guler and Yimaz (2008). Based on the results of the study, it can be seen that Market to Book Ratio is directly proportional to return, because firms that have a higher market to book ratio will produce more money and securities to avoid financial fallout and pressure and higher financing.

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**Table 2 Summary of Estimated Results of Regression Models for Small and Big Firms**

	Model IV		
	Coefficient	t-Statistic	
C	0,861	12,861	***
DSIZEC	-0,804	-7,976	***
MTBA	0,099	16,083	***
BETA	-0,145	-7,624	***
R <sup>2</sup>		0,251	
Sum squared resid		4729,340	
F-statistic		2,265	
Prob(F-statistic)		0,000	
Durbin-Watson stat		2,227	
N Observations		2.605	

This table presents a regression estimate of firm characteristics for returns of 2,605 firms a year. The research variables are: Return =  $(p1-p0 / p0)$ . Sizec = firm size based on market capital. DSizec = if the sample is included in the issuer group whose market capital is included in the group below the median. DSIZE = 0, if the sample is included in the issuer group whose total assets are included in the issuer group whose market capital is included in the group above the median. Beta is a measure that shows the extent to which a particular stock returns moving up and down following the stock market. Market To Book Ratio is a ratio used to assess financial difficulties. Beta is a measure that shows the extent to which a particular stock returns moving up and down following the stock market. T-statistic values that are heteroscedasticity robust white (1980) are presented in the column after the coefficient, \*\*\* = significant at the 1% level, \*\* = significant at the 5% level, and \* = significant at the 10% level.



The regression results in table 2 show that the DSIZEC coefficient is negative and significant. The results of this study confirm the findings of Banz, (1981). Banz (1981) found that there was an inverse (negative) relationship between firm size and stock returns which means that small firm stocks will provide a higher return than big firms. This phenomenon is contrary to the concept of an efficient market, where there is not a single piece of information that can be used by market participants to get a higher return (Tandelilin, 2010).

**Table 3 Summary of Estimated Results of Regression Models of Small and Big Firms Based on Beta**

	Model V					
	DSIZEC=1			DSIZEC=0		
	Coefficient	t-Statistic		Coefficient	t-Statistic	
C	-5,763	-10,587	***	-3,175	-4,457	***
SIZEC	0,582	11,017	***	0,271	5,528	**
MTBA	0,019	1,927	**	0,018	1,966	***
BETA	-0,074	-3,602	***	-0,115	-4,214	***
R <sup>2</sup>		0,239			0,639	
Sum squared resid		1250,659			1640,871	
F-statistic		1,420			8,176	
Prob(F-statistic)		0,000			0,000	
Durbin-Watson stat		2,327			1,990	
N Observations		1.300			1,305	

This table presents a regression estimate of firm characteristics for returns of 2,605 firms a year. The research variables are: Return =  $(p1-p0 / p0)$ . Sizec = firm size based on market capital. DSizec = if the sample is included in the issuer group whose market capital is included in the group below the median. DSIZE = 0, if the sample is included in the issuer group whose total assets are included in the issuer group whose market capital is included in the group above the median. Beta is a measure that shows the extent to which a particular stock returns moving up and down following the stock market. Market To Book Ratio is a ratio used to assess financial difficulties. Beta is a measure that shows the extent to which a particular stock returns moving up and down following the stock market. T-statistic values that are heteroscedasticity robust white (1980) are presented in the column after the coefficient, \*\*\* = significant at the 1% level, \*\* = significant at the 5% level, and \* = significant at the 10% level.

The regression results in table 3 show that the BETA coefficient is negative and significant. The results of this study confirm the findings of Banz, (1981) and Reinganum (1992). The results of this study found that there was an inverse (negative) relationship between BETA and stock returns in small firms which means that small firms will provide a higher BETA than big firms. This finding is contrary to the concept of high risk high return.

The regression results in table 4 show that the MTBA coefficient is positive and significant. The results of this study found that there was a positive relationship between MTBA

and stock returns in small companies which means that small firms will provide a lower MTBA compared to big firms. The increase in MTBA in small firms indicates that the market values the firm relatively lower than the book value of the firm. The higher MTBA value would lead the lower market that values the firm's stock. The low market value of a firm's stock makes investors less likely to get returns. Based on the results of the study, it can be concluded that MTBA in small firms is lower compared to the big firm.

**Table 4 Summary of Estimated Results of Regression Models of Small and Big Firms Based on Market to Book**

	Model VI		
	DSIZEC=1		
	Coefficient	t-Statistic	
C	-5,763	-10,586	***
SIZEC	0,582	11,017	***
MTBA	0,019	1,927	**
R <sup>2</sup>		0,239	
Sum squared resid		1250,659	
F-statistic		1,420	
Prob(F-statistic)		0,000	
Durbin-Watson stat		2,327	
N Observations		1300	

This table presents a regression estimate of firm characteristics for returns of 2,605 firms a year. The research variables are: Return =  $(p1-p0) / p0$ . Sizec = firm size based on market capital. DSizec = if the sample is included in the issuer group whose market capital is included in the group below the median. DSIZE = 0, if the sample is included in the issuer group whose total assets are included in the issuer group whose market capital is included in the group above the median. Beta is a measure that shows the extent to which a particular stock returns moving up and down following the stock market. Market To Book Ratio is a ratio used to assess financial difficulties. Beta is a measure that shows the extent to which a particular stock returns moving up and down following the stock market. T-statistic values that are heteroscedasticity robust white (1980) are presented in the column after the coefficient, \*\*\* = significant at the 1% level, \*\* = significant at the 5% level, and \* = significant at the 10% level.

## Discussion

The result of the effect of size test on returns is known that the SIZEC variable has a positive and significant effect on the stock returns of firms listed on the Indonesia Stock Exchange (Supported H1). Fama and French (1992) concluded that firm size is a factor that explains the sensitivity of return to risk. Fama and French (1992), the Three Factor Model have shown that one of the characteristics of a firm, namely firm size which influences the size of stock returns. The results of this study indicated that a large SIZEC will build investor confidence in a firm. This increases of investor confidence will increase stock demand and ultimately increase stock prices and stock returns. The firms that have many assets will be able to increase production capacity that has the potential to generate better profits. High profits will ultimately increase returns.

SIZEC in this study represents the firm size that appears in the firm's market capitalization. By the size of SIZEC, there is a tendency for more investors to pay attention to the firm, because the big firm tends to have more stable conditions. This stability attracts investors to own the firm's stock. The firm with large assets will use the available resources as much as possible to produce maximum business profits and the firm with small assets will certainly also produce small profits depends on their assets. SIZEC is very influential toward three main factors namely the amount of total assets, the amount of sales, and the size of market capitalization. Besides these main factors, SIZEC can also be influenced by labor factors and stock market value which are highly correlated. In addition, the more SIZEC will make easier for the firms to access funding. Easy access to funding is good information for investors. It can also reflect good prospects in the future as a positive indication (signal) by investors so that the value (stock) of the firm is affected positively. This positive signal makes SIZEC one of the vital variables.

The BETA coefficient shows a negative and significant direction for all models (H2 Supported). However, the coefficient sign is not in line with the predictions that the firms that have high BETA would have low returns.

In every investment instrument, of course, an investor is aware of the potential risks in each of his investments, even though the level varies from one investment to another. However, there is a general principle in financial management that can be understood, that every investment that has a high risk potential will produce a high return (high risk, high return). This is also applied in the capital market, where the risks faced by an investor can be divided into two types, namely non-systematic risk and systematic risk (beta stock). Systematic risk (measured from beta stocks), theoretically has a positive relationship with stock returns (Jogiyanto, 2009). However, in this study, BETA has a negative relationship with stock returns. This is possible, because the research was held on January 2010 to December 2018, in which the market of Indonesia is unstable (volatile period), so the results show that Beta has a significant negative effect on the firm's stock return. The firms that have high BETA will be highly volatile towards market movements, because the higher BETA of a firm would lead more sensitive toward the market changes. In other words, investors tend to worry about entering the market, because of unstable market movements, so the firms with high BETA will be very volatile towards market movements and provide unstable returns. Therefore, investors will prefer a firm with lower BETA that has a more stable return.

The effect of MTBA on returns is shown by the positive and significant MTBA coefficient on all models (Supported H3). This result shows that the result is in line with the prediction that the firms with high MTBA cause higher returns. The results of this study are consistent with research by Guler and Yimaz (2008) who found that MTBA had a significant positive effect on stock return, because the firms in this research sample are fundamentally, the firm's performance is still relatively good, so if the book value of the firm is smaller than the market price of a stock then there is an overprice and it's time to sell, whereas if the book value of the firm is higher than market price of stock per sheet then undervalued and it's time to buy. When the book value of a stock sheet is smaller than the market price of a stock sheet, the

analyst concludes that future income will grow greater than the value of the firm's liquidation. This can be used as an assessment for investors to see the financial performance of the firm's book value of market value, in order to produce high stock returns in the future.

Testing the size of small and big firms against returns produces a negative and significant DSIZEC coefficient. The results of this study confirm the findings of Banz, (1981). Banz (1981) found that there was an inverse (negative) relationship between company size and stock returns which means that small firm stocks will provide a higher return than the big firm (H4 Supported). This phenomenon is contrary to the concept of an efficient market, where there is not a single piece of information that can be used by market participants to get a higher return (Tandelilin, 2010).

Fama and French (1996) stated that a small firm stock will provide a higher return than a big firm stock. A small firm is more resilient to economic conditions, because this small firm tries to increase profit growth in controlling their businesses (Darusman, 2012). The development of small firm is done by retaining earnings so that it can reduce debt, increase production capacity, or open new branches of the firm (Darusman, 2012). The addition of production makes investors have good prospects in the future so they will want to invest their capital. Fama and French (1996) also stated that small firms will be able to produce large profit growth, because the profits generated by the small firm is still low. Conversely, the big firm will be difficult to increase profits in large numbers, because they have generated high profits (Fama and French, 1996).

Banz (1981) found a strong negative relationship between average return and firm size. The firms that have small market capitalization have a greater rate of return compared to the firms that have large market capitalization. In Banz's research (1981), it was stated that stocks with low market capitalization value or having a small firm size can produce higher returns than stocks with a larger firm size. In addition, in a study conducted by Chan, Hamao and Lakonishok (1991) confirmed that the firms with small capitalization had a return rate of 5 percent greater than large cap stocks. Keim's research in Elton, et al (2003) has the same conclusion as Banz's. Small firms have relatively higher growth rates, so they have more influence on fundamental changes, because the earnings obtained in small firms tend to be lower so that the increase in earnings for the following year is easier to do, whereas the big firms with large earnings, growth is relatively lower because earnings in the previous period tend to be already high.

Generally, smaller firm stock tend to have a greater return compared to the big firm stock, this phenomenon is commonly called the size effect. The research conducted by Barbee (1996) also shows the results that the firm size has a negative effect on stock returns. Barbee (1996) measures firm size through market value equity (MUE).

Testing the effect of small and big firms beta on returns shows that the BETA coefficient is negative and significant. The results of this study confirm the findings of Banz, (1981) and Reinganum (1992). The results of this study found that there was an inverse (negative) relationship between BETA and stock returns in small firms which means that these firms will provide a higher risk than the big firms (H5 Supported).

BETA is often associated with the deviation of the outcome (likelihood of results) received by those expected. Fama and French (1996) the small firm is more resistant to economic conditions because they try to increase profit growth in controlling their business, so the risk of small firm is also high. The development of small firm is done by retaining earnings so that it can reduce debt, increase production capacity, or open new branches of the company (Darusman, 2012). Fama and French (1996) also stated that small firms will be able to produce large profit growth, because the profits generated by small firms are still low and high risk.

Testing the relationship of return with MTBA on small shows that the coefficient of MTBA is positive and significant in small firms. The results of this study found that there was a positive relationship between MTBA and stock returns in small firms which means that small firms have lower MTBA compared to the big firms (H6 Supported). The increase in MTBA in small firms indicates that the market values the firm relatively lower than the book value of the firm. The higher MTBA value would lead the lower market that values the firm's stock. The low market value of a firm's stock makes investors less likely to get returns. Based on the results of the study, it can be concluded that MTBA in small firms is lower compared to the big firms.

The results of this study are in line with research conducted by Guler and Yimaz (2008) who found that MTBA has a significant positive effect on stock returns. The results of this study indicate that fundamentally small firms in Indonesia, the performance of the firm is still quite good. On the other hand, stocks of value groups that have a high book to market equity ratio outperformed the returns of stocks from the growth group with low book to market equity ratios. This phenomenon is known as the value effect.

## Conclusion

2 This study was designed to test the anomaly size effect on the Indonesia Stock Exchange. Based on the results of the study, it can be concluded that:

1. Based on the results of the study, it can be seen that the SIZEC variable had a positive and significant effect on the firm's stock returns listed on the Indonesia Stock Exchange (Supported H1).
2. Based on the results of the study, it can be seen that the BETA coefficient showed a negative and significant coefficient for the whole model (Supported H2).
3. The results of this study indicated that the MTBA coefficient was positive and significant in all models (H3 Supported). This result shows that the result was in line with the prediction that firms with high MTBA cause higher returns.
4. The results showed that the regression results showed that the DSIZEC coefficient was negative and significant. The results of this study confirm the findings of Banz, (1981). Banz (1981) found that there was an inverse (negative) relationship between firm size and stock returns which means that small firm stocks will provide a higher return than the big firms (H4 Supported).

5. The results showed that the BETA coefficient was negative and significant. The results of this study confirm the findings of Banz, (1981) and Reinganum (1981). The results of this study found that there was an inverse (negative) relationship between BETA and stock returns in small firms. That is, small firms will provide a higher BETA than the big firms (H5 Supported).
6. The results indicated that the MTBA coefficient was positive and significant in the small firms. The results of this study found that there was a positive relationship between MTBA and stock returns in small firms which means that small firms have lower MTBA compared to the big firms (H6 Supported).

### Limitation

The weakness of this study is that this research did not control the industrial aspects, did not separate Sharia and conventional firms, did not separate the firms based on high profile and low profile, so that anomaly size effect of each firm can be known.

### Suggestion

The researchers provide some suggestions for the further researcher who will develop this research, namely:

1. Related to the weaknesses of this research, the further research must distinguish the firms based on industry, so that anomaly size effect can be seen between the firms of each industry.
2. For further researches, they can add other variables that can be used such as book value equity per share and return on equity.

### REFERENCES

- [1]. Alteza, M. (2007) 'Efek hari perdagangan terhadap return saham: suatu telaah atas Anomali Pasar Efisien', *Jurnal ilmu manajemen*, 3(1), pp. 31-42.
- [2]. Asnawi, Said K., dan Wijaya Chandra (2005). *Riset Keuangan: Pengujian- Pengujian Empiris*. Jakarta: Gramedia Pustaka Utama.
- [3]. Banz, R.W. (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics*, Vol. 9, pp. 3-18.
- [4]. Barbee Jr, W. C., Mukherji, S. and Raines, G. A. (1996) 'Do sales-price and debt-equity explain stock returns better than book-market and firm size?', *Financial Analysts Journal*, 52(2), pp. 56-60.
- [5]. Berk, J. (1996) 'An empirical re-examination of the relation between firm size and return', *Unpublished manuscript, University of British Columbia*.
- [6]. Brigham, E. F. and Houston, J. F (2009). *Fundamental of Financial Management*. 12<sup>th</sup> Edition
- [7]. Bodie, Zvi. Kane, Alex and Marcus, Alan J. (2009). *Investments*. Eighth edition, New York: McGraw-Hill.
- [8]. Chan.Louis K.C; Yasushi Hamao; Josef Lakonishok. (1991). *Fundamentals and Stock Returns in Japan*. *Journal of Finance* Vol 46, Issue 5. <https://onlinelibrary.wiley.com/doi/10.1111/j.1540-6261.1991.tb04642.x>

- [9]. Darusman, Dery. 2012. *Analisis Pengaruh Firm Size, Book to Market Ratio, Price Earning Ratio, dan Momentum Terhadap Return Portofolio Saham*. Diponegoro Journal of Management, Vol. 1 No. 1, Tahun 2012: 212-225.
- [10]. Elton, Edwin, J., and Gruber, Martin, J, 1995. Modern Portfolio Theory and Investment Analysis. *Journal of Finance*, Singapore.
- [11]. Fama. Eugene F. (1970) Efficient Capital Markets: A Review of Theory and Empirical Work The Journal of Finance, Vol. 25, No. 2, Papers and Proceedings of the Twenty-Eighth Annual Meeting of the American Finance Association New York, N.Y.
- [12]. Fama, Eugene & French, K.R, 1992. "The Cross Section of Expected Stock Returns". *The Journal of Finance*, 67. 2: 427.
- [13]. -----, 1993. "Common Risk Factors in the Returns of Stocks and Bonds". *Journal of Finance Economics* 33: 3-56.
- [14]. -----, 1995. "Size and Book-to-Market Factors in Earnings and Returns". *Journal of Finance* 50, 131-155.
- [15]. -----, 1996. "Multifactor Explanations of Asset Pricing Anomalies". *Journal of Finance*. 51:55-84.
- [16]. -----, 1998. "Value versus Growth: The International Evidence". *Journal of Finance* 53: 1975-1999.
- [17]. Fama, E. F. and French, K. R. (2012) 'Size, value, and momentum in international stock returns', *Jornal of Financial Economic*, 105 (3)
- [18]. Fletcher, Jonathan (2000). On the Conditional Relationship Between Beta and Return in International Stock Returns. *International Review of Financial Analysis*, 9, pp.235-245.
- [19]. Guler, Aras dan Mustafa Kemal Yilmaz. 2008. "Price Earnings Ratio, Dividend Yield, and Market to Book Ratio to Predict Return on Stock Market: Evidence from The Emerging Markets. *Journal of Global Bussiness an Technology*, 4 (1), hlm. 18-30"
- [20]. Jogyanto Hartono, (2013). *Teori Portofolio dan Analisis Investasi*. Edisi Kedelapan. Yogyakarta: BPFE.
- [21]. Jones, C., Menezes, F. M. and Vella, F. (1996) *Auction price anomalies: evidence from wool auctions in Australia*.
- [22]. Lamoureux, Christopher G., and Sanger, Gary C.(1989). Firm Size and Turn of the Year Effects in the OTC/NASDAQ Market. *The Journal of Finance*, Vol.44 No.5.
- [23]. Levy, H. (1996). *Introduction to Investments*. Cincinnati, Ohio: South Western College Publishing.
- [24]. Michailidis, Grigoris. Tsopoglou, Stavros, & Papanastasiou, Demetrios, 2007. "The Cross Sectional of Expected Stock Returns for the Athen.
- [25]. Niresh J. Aloy dan Velnampy T (2014). Firm Size and Profitability: A Study of Listed Manufacturing Firms in Sri Lanka. *International Journal of Business and Management*; Vol:9, No:4.p:57-64.
- [26]. Pandey, A. and Sehgal, S. (2016) 'Explaining size effect for Indian stock market', *Asia-Pacific Financial Markets*, 23(1), pp. 45-68.
- [27]. Pearson, K. (1905) The Problem of the Random Walk. *Nature*, 72 294.
- [28]. <http://dx.doi.org/10.1038/072294b0>
- [29]. Prasad Saroj S dan Verma Ashutosh (2013).Size and Returns: A Study of the Indian Stock Market. *Indian Journal of Finance*, Vol:7, Iss:5.
- [30]. Reinganum, Marc R. (1992). A Revival of the Smal-Firm Effect. *Journal ofPortofolio Management*, Vol:18 Iss:3 p:55-62.
- [31]. Sehgal, S. and Balakrishnan, A. (2013) 'Robustness of Fama-French three factor model: Further evidence for Indian stock market', *Vision*, 17(2), pp. 119-127.
- [32]. Sehgal S. and Tripathi V. (2004). Size Effect in Indian stock Market: Some Empirical Evidence. Presented at International Conference on Delegated Portfolio Management and Investor Behaviour.China: Sichuan University.

- [33]. Tandelilin, Eduardus (2010). Portofolio dan Investasi Teori dan Aplikasi. Edisi pertama. Yogyakarta: Kanisius.
- [34]. Xu, J. (2002). The Size Effect of the Stock Returns in the Chinese Market. SSRN Working Paper. China: Peking University.
- [35]. Yalçın, K. C. 2010. "Market Rationality: Efficient Market Hypothesis versus Market Anomalies". *European Journal of Economic and Political Studies*, Vol. 3, No. 23.



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