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ANALYSIS OF SHARE PERFORMANCE USING THREE FACTORS MODEL FAMA AND FRENCH (TFMFF) IN ILQ-45 STOCK PERIOD 2017-2020

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ABSTRAK

Penelitian yang dilakukan oleh Fama dan French pada tahun 1996 menunjukkan bahwa terdapat faktor selain beta yang secara signifikan mampu memprediksi return saham. Namun, beberapa penelitian selanjutnya menunjukkan hasil yang tidak konsisten. Adanya perbedaan hasil penelitian sebelumnya mendorong penelitian ini untuk dilakukan. Dalam penelitian ini, kamimemilih saham yang digunakan berdasarkan kriteria keuntungan perusahaan dan *return on equity* (ROE) yang ditawarkan oleh Warren Buffett. Penelitian ini menggunakan kriteria BuffetBEt dalam memilih saham-saham yang digunakan untuk menganalisis TFMFF dalam mengestimasi return saham-saham yang dikelompokkan ke dalam portofolio Fama & French. Metode yang digunakan adalah kuantitatif. Data sekunder yang digunakan adalah data harga penutupan triwulanan, nilai ekuitas perusahaan tambang, tingkat suku bunga Bank Indonesia (*risk-free rate*), dan jumlah saham beredar (jumlah saham beredar). Hasil menunjukkan bahwa TFMFF akurat dalam memprediksi return saham.

Kata Kunci: Premi Risiko, Ukuran, BE/ME, Tingkat Pengembalian

ABTRACT

Research conducted by Fama and French in 1996 showed that there were factors other than the beta that were significantly able to predict stock returns. However, several subsequent studies showed inconsistent results. The discrepancy between the results of previous studies prompted this research to be carried out. In this study, the researchers selected the stocks used based on the criteria for company profits and return on equity (ROE) offered by Warren Buffett. This study uses Buffett's criteria in selecting stocks that are used to analize TFMFF in estimating the return of stocks grouped into the Fama & French portfolio. The method used is quantitative. The secondary data used are quarterly close price data, mining company equity value, Bank Indonesia interest rate (risk-free rate), and number of outstanding shares (number of shares outstanding). The results show that the TFMFF is accurate in predicting stock returns.

Keywords*: Risk Premium, Size, BE/ME, Rate of Return*

INTRODUCTION

Investment is delaying current consumption to be used in efficient production for a certain period of time (Jogiyanto, 2017). Investment analysis often faces problems, namely regarding the assessment of risks faced by investors. Financial theory explains that if the investment risk increases, the level of profit required by investors will increase. To reduce investment loss/risk, investors can invest in various types of stocks by forming a portfolio (Babbel & Fabozzi, 1999). Meanwhile, according to (Jones et al., 2002) rational investors make investment decisions starting by analyzing the current situation; designing optimal portfolios; formulate investment policies; implicate investment strategy; monitor and supervise the specific performance of financial managers.

The existence of a positive relationship between return and risk in investing is known as high risk-high return, which means that the greater the risk that must be borne, the greater the return generated. Return is the result obtained from the investment. Returns can be realized returns that have occurred or expected returns that have not occurred but are expected to occur in the future. Meanwhile, portfolio risk consists of systematic and unsystematic risks. These two risks are often referred to as total risk (Jogiyanto, 2017).

According to (Elton & Gruber, 1977) portfolio analysis is concerned with the desire to acquire a group of securities to hold and benefit from each of these securities. Portfolios are categorized as efficient if they have the same level of risk, are able to provide a higher level of profit, or are able to generate the same level of profit, but with lower risk. Meanwhile, the optimal portfolio is the portfolio chosen by an investor from the many choices that exist in an efficient collection of portfolios (Tandelilin, 2001).

The diversification strategy is carried out with an optimal portfolio, which means that profits are obtained by diversification in various investments, with a certain number of securities that have a fairly high return. The optimal portfolio is achieved by simulating several securities that are considered efficient using certain calculation procedures (Sartono & Zulaihati, 1998). To form one or several portfolios requires selected stocks that will be combined into the portfolio. The number of stocks chosen to form a portfolio varies greatly, it depends on the investor's preference for the stock itself. In the context of investment, this saying can be interpreted as "Do not invest all the funds we have in just one asset, because if the asset fails, then all the funds that have been invested will disappear" (Tandelilin, 2001).

The most popular calculation model used is the Capital Asset Pricing Model (CAPM), in its application CAPM uses a single risk factor, namely market risk as a measure of risk in estimating returns. According to (Gitman & Zutter, 2012) in the CAPM there are two types of risk. The first is unsystematic risk and the second is systematic risk. If the two types of risk are combined, it is called total risk. Although the Capital

Asset Pricing Model cannot be proven empirically. The CAPM model has been widely used because this model has fairly good accuracy in determining the return of a stock. The CAPM model assumes that investors are planners in a single period who have the same perception of market conditions and seek the mean variance of the optimal portfolio (Andri, 2010). Fama and French (Fama, 1996) found that there are two other risk factors besides market risk, namely firm size which is proxied by small minus big (SMB), and book to market equity which is proxied by high minus low (HML) in their model, known as the Three Factors Model Fama and French (TFMFF). The factors that influence return according to Fama and French are size, beta, and book-to-market equity. Size (size) of shares seen through the value of stock market capitalization (number of outstanding shares multiplied by the share price). Small stocks tend to have a higher risk because they have a higher expected profit rate compared to large stocks. Large book-to-market equity (BE/ME) reflects investors who are pessimistic about the company's future. Conversely, if investors are optimistic about the company's future, the book value to market equity will be small. Beta is a measure of the volatility of a security's return or portfolio return on market returns. Fama and French (1996) in their research found that market risk, firm size (SMB), and BE/ME (HML) have a significant effect on returns. Some researchers agree with the findings of Fama and French (Fama et al., 1996) as can be seen in research by (Nur' ainy et al., 2013),(Pasaribu, 2010), and (Rizkiana & ARDIYANTO, 2011). However, several other researchers disagree with Fama & French's research, such as research that can be seen in Saputra and (Murtini & Peranginangin, 2006) and (Sudiyatno & Irsad, 2011).

The differences in the results of previous studies inspired this research. Warrant Buffet divides investment techniques into 4 valuation principles, that is: business principles (business tenet), management principles (management tenet), financial principles (financial tenet), and value principle (value tenet). In this study, the company's profit criteria and Return on Equity (ROE) were used as proposed by Warrant Buffet to analyze stock performance using the TFMFF in companies that are members of the ILQ-45.

Hypothesis

If the Capital Asset Pricing Model (CAPM) method is the only indicator of return assessment is the risk premium (beta), then the theory development carried out by Fama and French involves two added variables to measure the stock returns owned by investors. Or known as the Capital Asset Pricing Model (CAPM) and the Three Factors Model Fama and French (TFMFF). The two variables are size and book-to-market equity. The addition of these two variables gives some researchers the assumption that this is the most efficient model to use in calculating returns.

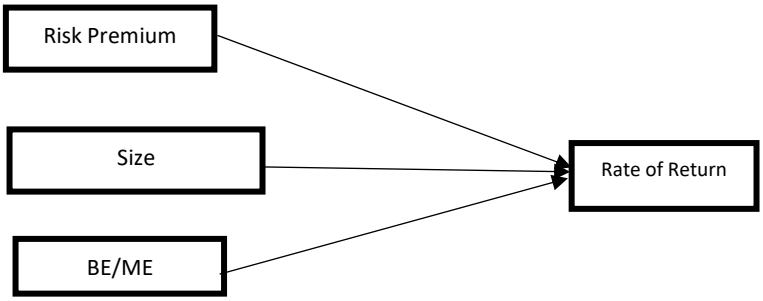

Figure 1: Research framework

Independent Variables : Risk Premium, Size (Company Size) and BE/ME.
Dependent Variable : Rate of Return

- H1: Market risk as proxied by market return affects the rate of return for each type of Fama and French portfolio (S/L, S/M, S/H, B/L, B/M, and B/H).
- H2: Firm size proxied by SMB affects the rate of return for each type of Fama and French portfolio (S/L, S/M, S/H, B/L, B/M, and B/H).
- H3: BE/ME proxied by HML affects the rate of return for each type of Fama and French portfolio (S/L, S/M, S/H, B/L, B/M, and B/H).

RESEARCH METHODS

Research Time and Location

This research was conducted on companies whose shares were listed in ILQ 45 for the 2017-2020 period. The secondary data used are quarterly close price data, mining company equity value, Bank Indonesia interest rate (risk- free rate), and number of outstanding shares (number of shares outstanding). The share price of each company per month is obtained from the Yahoo Finance website (www.yahoofinance.com), the equity value of each company and data on the number of outstanding shares are obtained from the financial statements of each company that has been published on the Indonesia Stock Exchange website (www.idx.co.id) as well as in the Indonesia Capital Asset Market Electronic Library (ICAMEL) database, and the risk-free rate per month is obtained from the Bank Indonesia website (www.bi.go.id). The type of research used in this research is quantitative research. The research design can be seen in the following chart:

Operational Definition and Measurement of Research Variables

This study uses stock returns as the dependent variable and can be formulated under market excess returns, namely the difference between quarterly stock returns and the quarterly average risk-free rate as follows (Hardianto & Suherman, 2009):

$$Excess\ Return = R_i t - R_f t$$

$$R_i = \frac{(P_t - P_{t-1})}{P_{t-1}}$$

Note:

$R_i t$ = stock return
$R_f t$ = risk-free return
P_t = stock price in month t
P_{t-1} = stock price in month t-1

The independent variables in this study use the factors found in the Fama and French models

Risk premium

Market risk premium can be defined as the difference between the monthly average of all stocks (JCI) and the quarterly risk-free rate. The market premium risk value can be obtained based on historical data. Mathematically, the calculation of the risk premium is as follows (Sudiyatno & Irsad, 2011):

$$RP_m = R_m - R_{rf}$$
$$R_m = \frac{(P_t - P_{t-1})}{P_{t-1}}$$

Note:
RP_m = Market risk premium
R_m = JCI quarterly average
R_{rf} = Average risk-free rate quarterly
P_t = stock price in month t
P_{t-1} = stock price in month t-1

Size (company size)

Size is the multiplication of the number of outstanding shares with the share price of each company sampled (Sudiyatno, 2011). Size in this study is proxied by Small Minus Big (SMB). SMB measures the historical incremental returns that investors receive in investing in small-sized companies through the difference between the average return on shares in three portfolios with small market capitalization and the average return on shares in three portfolios with a large market capitalization (Yolita, 2014). This can be explained in the following formula:
Size = Share Price per share *x* Number of Shares Outstanding

$$SMB = \frac{\left(\frac{S}{L} + \frac{S}{M} + \frac{S}{H}\right) - \left(\frac{B}{L} + \frac{B}{M} + \frac{B}{H}\right)}{3}$$

Note:
SMB = The difference each month between the average returns on the three small stock portfolios (S/L, S/M, S/H) and the returns on the three large stock portfolios (B/L, B/M, BH)
S/L = Small size portfolio divided by BE/ME low
S/M = Small size portfolio divided by BE/ME medium
S/H = Small size portfolio divided by BE/ME high

B/L = Portfolio size is largely divided by BE/ME low
B/M = Portfolio size is largely divided by BE/ME medium
B/H = Portfolio size is largely divided by BE/ME high

The steps for establishing an SMB portfolio are as follows:

1. Calculating the market capitalization of each company obtained by multiplying the number of outstanding shares by the close price of each share.
2. Determine the median of the market capitalization value.
3. Sorting existing stocks based on market capitalization into two groups, namely 50% stocks with small market capitalization or small (S) and 50% stocks with large market capitalization or big (B).

Book to Market Equity (BE/ME)

Book to Market Equity is the ratio of the market price of a stock to its book value (Mardiyati et al., 2012). Book value shows the net assets owned by shareholders. Net assets are equal to total shareholder equity. In this study, book-to-market equity is proxied by High Minus Low (HML). HML measures the historical additional returns that investors receive in investing in companies with high book-to-market equity values (Yolita and Fauzie, 2014).

$$Book\ to\ Market\ Equity = \frac{Total\ Equity}{Jumlah\ Saham\ Beredar\ x\ losing\ Price}$$

$$HML = \frac{\left(\frac{S}{H} + \frac{B}{H}\right) - \left(\frac{S}{L} + \frac{B}{L}\right)}{2}$$

Note:

HML = The difference each month between the average returns on the two portfolios with high BE/ME (S/H and B/H) and the average of returns on the two portfolios with low BE/ME (S/L and B/L)
S/H = Small size portfolio divided by BE/ME high
B/H = Portfolio size is large divided by BE/ME high
S/L = Small size portfolio divided by BE/ME low
B/L = Portfolio size is large divided by BE/ME low

The steps for forming an HML portfolio are as follows:

1. Equating the total equity unit of the entire company into thousands of rupiah. If there is a company's total equity in dollars, it is equated using the middle exchange rate prevailing in that period, which is multiplying the total equity (in dollars) by the middle rate obtained from the sum of the selling rate and buying rate divided by two.
2. Calculating the book to market equity value by dividing the total equity (in units of thousands of rupiah) obtained from the financial statements by multiplying the number of outstanding shares with the quarterly close price.
3. Sorting stocks based on book to market equity value into three groups, namely 30% stocks with low book to market equity (L), 40% stocks with medium book to market equity (M) and 30% stocks with medium value high book to market equity (H).

Population and Research Sample

The population in this study were all companies listed in ILQ 45 for the 2017-2020 period. The sampling technique in this study was purposive sampling where the data are taken according to certain considerations (Sugiyono, 2009). The sample in this study has the following criteria:

1. Shares of companies listed in ILQ 45 for the 2017-2020 period.
2. Companies that publish quarterly, second, third, and fourth-quarter financial reports on the Indonesia Stock Exchange website or in the Indonesian Capital Asset Market Electronic Library (ICAMEL) database during the research period.
3. Companies that have an optimal average close price according to the estimates in this study.
4. Companies that have a positive book-to-market equity value.

Data Collection Method

The data collection method used is the documentation method which is a data collection technique in the form of a record of events that have passed. The collection was done by collecting documents in the form of data, through the official website of the Indonesia Stock Exchange, Yahoo Finance, Bank Indonesia, and the Indonesian Capital Asset Market Electronic Library (ICAMEL).

Data Analysis Techniques

The analysis technique in this study using simple linear regression analysis and multiple linear regression with Eviews 8 analysis tool.

Test Statistics

Simple Regression Test

Simple linear regression analysis was performed on the CAPM with the following model:

$$R_{it} - R_{ft} = \alpha_i + \beta_i(R_{mt} - R_{ft}) + \varepsilon_{it}$$

Note:

R_{it} = Return on asset i in period t
R_{ft} = Risk-free asset return in period t
α_i = intercept
β_i = Market beta or stock regression coefficient i
R_{mt} = Return or market profit rate for period t

Multiple Regression Test

Multiple linear regression analysis is useful for analyzing the linear relationship between two or more independent variables with one dependent variable (Priyatno, 2009). Multiple linear regression analysis was performed on TFMFF with the following model:

Simultaneous Test (Test f)

The model test is a joint regression coefficient test to see the significance of the

effect of each independent variable on the dependent variable. The test uses a significance level of 0.05.

Partial Test (t-Test)

According to (Puspita & GHOZALI, 2011), the t-test difference test is used to test how far the influence of the independent variables used in this study individually explains the dependent variable partially. This t-test was used to test the significance of the CAPM and TFMFF parameters

Coefficient of Determination Test (Adjusted R Square)

The coefficient of determination (Adjusted R Square) was used to measure the influence of the model used to explain all the dependent variables in this study. The value of the coefficient of determination is 0 (zero) and 1 (one). The amount of Adjusted R2 will measure the proportion or percentage of the total variation in Y described by the regression model (Zainodin & Yap, 2013).

RESULTS AND DISCUSSION

Results

According to (Morissan, 2012), the population is a collection of subjects, variables, concepts, or phenomena. We can examine each member of the population to determine the nature of the population in question. The sample is part of the population that is the source of data in the study, where the population is part of the number of characteristics possessed by the population (Sugiyono, 2009). In this study using secondary data. According to (Umar, 2013), primary data has been further processed and presented either by primary data collectors or by other parties, for example in the form of tables or diagrams.

This research was conducted on companies whose shares were listed in ILQ 45 for the 2017-2020 period. The secondary data used are quarterly close price data, mining company equity value, Bank Indonesia interest rate (risk-free rate), and number of outstanding shares (number of shares outstanding). The share price of each company per month is obtained from the Yahoo Finance website (www.yahoofinance.com), the equity value of each company and data on the number of outstanding shares are obtained from the financial statements of each company that has been published on the Indonesia Stock Exchange website (www.idx.co.id) as well as in the Indonesia Capital Asset Market Electronic Library (ICAMEL) database, and the risk free rate per month is obtained from the Bank Indonesia website (www.bi.go.id). The total companies used in this study were 45 companies. With a duration of 4 years, the total final sample was 180 samples. From that number of companies, then they are grouped (excess return) into 5 division categories, namely S (small), B (big), L (Low), M (medium), and H (high).

Descriptive Statistics

Tabel 1 Table of Descriptive Statistics of Research Data

Portofolio	Mean	Median	Maksimum	Minimum	Std.Dev
S/L	3.795503	1.8972	48.0792	1.6582	6.750478

S/M	0.631825	0.6526	0.6997	0.5227	0.058185
S/H	0.288318	0.2914	0.3401	0.1931	0.035119
B/L	9.47677	4.0374	129.1811	3.4157	18.46949
B/M	1.424445	1.4168	1.5187	1.3415	0.040476
B/H	0.654387	0.6939	0.7388	0.3978	0.087607
Marjet Risk	0.004167	0.000000	0.340000	-0.140000	0.061055
SMB	-1.221877	0.042385	3.159565	-22.74676	4.738656
HML	3.646911	-2.085608	91.84453	-40.88306	23.04546

Source: Data processed with Eviews 10

Table 1 above describes the descriptive statistics of the data used in this study. Starting from the mean, median, maximum data, minimum data, and standard deviation of the three independent variables, namely market risk variables, size risk variables (SMB), and book-to-market ratio (HML) risk variables, as well as six portfolios forming the independent variable (S). /L, S/M, S/H, B/L, B/M, and B/H). The average value of market risk is 0.004167 which means that the average monthly market return is above the large risk-return. This positive value indicates that market returns tend to be above the risk-free rate of return. A negative SMB (Small Minus Big) value (-1.221877) indicates that on average relatively smaller companies have lower returns, while a positive HML (High Minus Low) value (3.646911) indicates that companies with a BM value (book-to-market) outperform companies with low BM values.

Prerequisite Test

In this study we using the normality test, multicollinearity test, autocorrelation test and heteroscedasticity test. The normality test results show that the Jarque-Bera probability values for each research variable are 0.3385 (excess return), 0.3400 (risk premium), 0.990 (SMB), and 0.6900 (HML). These four values meet the minimum threshold value of 5% so that the assumption of normality is met. The multicollinearity test shows that the centered VIF value for each independent variable is as follows, risk premium is 1.13706, SMEs is 1.10110 and HML is 1.13706. These four values show a value below 10. This means that the multicollinearity assumption is fulfilled. The autocorrelation test shows that the Chi-Square shows the number 0.68350. This value exceeds 5%, meaning that the autocorrelation test assumption is met. And finally, the heteroscedasticity test shows that the Chi-Square shows the number 0.072900. This value exceeds 5%, meaning that the assumption of the heteroscedasticity test is met. Of all the 4 types of prerequisite tests that have been carried out, it can be concluded that all types of tests are fulfilled.

Regression Test

Table 6: TFMFF Regression Test on Portfolio

Portofolio	Variable	Coeficient	Std. Error	t-Statistic	Prob
S/L	C	-0.0523	0.0015	-34.2624	0.0000
	X1 (Market Risk)	0.9374	0.0117	79.8621	0.0000
	X2 (SMB)	-0.0024	0.0009	-2.5059	0.0145
	X3 (HML)	0.0014	0.0006	2.4207	0.0181
S/M	C	-0.0723	0.0076	-9.5022	0.0000

	X1 (Market Risk)	3.7665	0.2570	14.6576	0.0000
	X2 (SMB)	-0.0396	0.0037	-10.6883	0.0000
	X3 (HML)	0.0243	0.0023	10.4213	0.0000
S/H	C	-0.0433	0.0024	-18.0176	0.0000
	X1 (Market Risk)	1.1554	0.0209	55.2740	0.0000
	X2 (SMB)	0.006976	0.002881	2.421375	0.0246
	X3 (HML)	0.01427	0.00194	7.36900	0.00000
B/L	C	-0.0218	0.0018	-11.9729	0.0000
	X1 (Market Risk)	0.2982	0.0152	19.6023	0.0000
	X2 (SMB)	-0.01038	0.0029	-3.57847	0.0018
	X3 (HML)	-0.0068	0.0007	-9.7953	0.0000
B/M	C	0.0719	0.0194	3.7036	0.0004
	X1 (Market Risk)	-2.2404	0.3891	-5.7577	0.0000
	X2 (SMB)	0.1864	0.0173	10.7456	0.0000
	X3 (HML)	0.056132	0.030786	1.823283	0.0859
B/H	C	-0.0354	0.0031	-11.3171	0.0000
	X1 (Market Risk)	0.290036	0.027254	10.64208	0.0000
	X2 (SMB)	-0.004847	0.001456	-3.328955	0.0014
	X3 (HML)	0.002972	0.00092	3.230598	0.0019

Source: Data processed with Eviews 10

To increase the level of accuracy of stock performance measurement, Fama and Friends proposes 2 more measurement variables, namely Firm Size and Book to Market Equity (BE/ME). In this research, Firm size is proxied by SMB and BE/ME is proxied by HML.

From table 6 above it can be seen that the market risk for S/L, S/M, S/H, B/L, B/M and B/H portfolios each shows a significance value of 0.0000. This means that market risk has a significant effect on stock returns (H1 is accepted). In this case it means that the investment risk is directly proportional to the rate of return on shares. The higher the aggressiveness of investors in carrying out investment activities, the higher the expected rate of return on the investment made. Although, the level of aggressiveness of investors must still be adjusted to the risk profile of each investor.

Based on table 6, for the independent firm size (SMB) variable, it can be seen that in the first portfolio, namely S/L, the significance value is 0.0145. The second portfolio, S/M, shows a significance value of 0.0000. The S/H portfolio shows a significance of 0.0246. The B/L portfolio shows a significant number of 0.0018. The B/M portfolio shows a significance value of 0.0000. Finally, the B/H portfolio shows a significance number of 0.0014. All types of portfolios show a significant number less than 5%. So that the firm size proxied by SMB has a significant effect on the rate of return of each type of Fama and French portfolio (S/L, S/M, S/H, B/L, B/M and B/H). H2 is accepted.

Based on table 6, it can be seen that in the first portfolio, namely S/L, the significance value is 0.0181. The second portfolio, S/M, shows a significance value of 0.0000. The S/H portfolio shows a significance of 0.0000. The B/L portfolio shows a significant number of 0.0000. The B/M portfolio shows a significant number of 0.0859. Finally, the B/H portfolio shows a significant number of 0.0019. All types of portfolios show a significant number less than 10%. So that BE/ME proxied by HML has a significant

effect on the rate of return of each type of Fama and French portfolio (S/L, S/M, S/H, B/L, B/M and B/H). H3 is accepted.

This research is in line with research conducted by Veysel Eraslan (2013). The results of the coefficients in this study show different numerical values for each form of a portfolio. This means that after the addition of the independent variables, size and BE/ME, the market risk variable can still explain the risk-free rate of return for each form of a portfolio. This shows that the influence of the market on investor decisions is different for companies with different sizes and BE/ME.

However, this study is not in line with research conducted by (Lozano, 2006), (Fama, 1996), and (Bundoo, 2008). With the addition of 2 independent variables, the market coefficient or market risk in each form of the portfolio will approach the value of one. With the addition of two independent variables, the market risk coefficient or beta in each portfolio will be close to one. The market risk coefficient that is close to one for all portfolios indicates that market risk cannot explain stock returns for each form of the portfolio after adding size and BE/ME.

The inconsistency of the results of this study with previous studies shows that the samples used in previous studies such as the NYSE (New York Stock Exchange), AMEX (American Stock Exchange), NASDAQ (National Association of Securities Dealers Automated Quotations), Stock Exchange of Mauritius and Istanbul The Stock Exchange has different investor behaviour from investors in stocks that are members of the LQ-45 index. The market risk value that is close to number one indicates that there is no abnormal return on the return of investors' shares. The absence of abnormal returns indicates that the capital market in this study is included in the category of "strong" market form where all investors have the same information in making investment decisions. The market risk value in this study shows different numbers in each form of a portfolio. This indicates that the capital market used in this study is in the form of a "weak" market, where historical information can predict future prices and investors tend to have different behaviours and slow reactions due to differences in the information received. Therefore, abnormal returns are still visible and not fixed for a long period of time. In addition, to capital market factors and different market forms in previous studies, the variation in market risk values in this study is also caused by the limited sample used, namely companies that are members of the LQ-45 index.

CONCLUSION

Conclusion

This research was conducted on companies listed in the ILQ-45 index. The sample was then divided into 6 types of portfolios, namely S/L, S/M, S/H, B/L, B/M and B/H. The results of this study indicate that all independent variables; market risk, company size and BE/ME have a significant effect on the dependent variable, namely the rate of return on stock prices. This shows that the TFMFF can accurately predict the rate of return on stock prices.

Suggestion

This study was only conducted on companies that are members of the LQ-45 index and was only carried out for a limited period. Further research may be carried out, not only expanding the sample for companies other than the LQ-45 index but also extending to other companies in Indonesia. In addition, to improve the academic perspective, a sample of companies from abroad can also be added. The addition of the research period will also increase the perspective of research on the same topic.

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