Research.

January Effect Analysis on The Indonesian Stock Market (Case Study of the 2016-2020 LQ45 Index Stock)

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Abstract: The January effect anomaly that occurred in the Indonesian stock market was inconsistent and only occurred in a few years. However, its existence is sufficient to create a potential negative return risk in the non-January trading month. So this research purposes to identify the characteristics of the January effect anomaly that occurs and its effect on abnormal stock returns in the long term of five years. The research sample contains 27 publicly listed company stocks in the LQ45 index from 2016 to 2020. The analytical tool used in this research is a multiple linear regression model with panel data method. This research finds that the January effect anomaly only occurs in some stocks in the LQ45 index. The peak occurred in 2018 and 2019. According to the regression test, it was found that the January effect anomaly had no significant effect on stock abnormal returns. Thus, the recommendation for investors is not to overreact to the January effect anomaly. As well as maintaining the efficient condition of the Indonesian stock market by conducting fair share trading.

Keywords: Market anomaly, panel data, January effect, multiple linear regression.

INTRODUCTION

Various scientific explorations have been developed in investigating the symptoms of market anomalies. Dash and Mahakud (2015) prove that there is an anomaly in stock pricing in the Indian stock market as a developing country. However, the results of his research cannot be widely used as evidence because it depends on macroeconomic conditions and market volatility. Then, Vasileiou and Samitas (2015) found an anomalous pattern of January effect in the Greek stock market with developed country status. This phenomenon is seen in periods of monetary growth and disappears during periods of recession. Patel (2016) detects the January effect phenomenon in the stock market of the United States and developing countries through international stock indices. Meanwhile, research on anomalous symptoms in the Indonesian stock market was conducted by Kasdjan et al. (2017), Hendrawaty and Huz purposeah (2019) and (Malini 2019). Kasdjan et al. (2017) failed to identify the January effect anomaly in the Indonesian stock market as represented by the LQ45 stock index. Also, Hendrawaty and Huz purposeah (2019) failed to explain the existence of the January effect anomaly in the Indonesian stock market. Then Malini (2019) explained that the January effect anomaly, which is a type of month of the year effect anomaly, does not occur consistently every year in the Indonesian stock market.

Theoretically, the January effect anomaly is characterized by a significantly higher return value in January than the other 11 months (Damodaran 2012). According to the historical value of the Composite Stock Price Index (JCI) in the last five years, the highest positive returns in January only occurred in 2018, and 2019, with cumulative return rates of 3.92% and 5.35%, respectively. Meanwhile, the following months showed lower performance, with average non-January returns of -0.48% and -0.28%. The occurrence of high significant returns in the January trading month, indicates the potential to exploit excess returns (abnormal returns) in January. This has an impact on the potential for negative returns in the following month. This phenomenon is a pattern that indicates an inefficient market because it does not match the random walk assumption of the Efficient Market Hypothesis (EMH) theory (Fama 1970).
Meanwhile, in 2016, 2017, and 2020 there was no significant positive January return. The average monthly cumulative return in the three years is 1.3%; 1.5%; and -0.1%. The negative average return that occurred in 2020 was because of the negative growth of the JCI that dominated the market. This lowest value reached -37.49% of the JCI value at the end of 2019. This value managed to grow by 56.58% until the end of 2020, after the economic stimulus in the form of a stock buyback policy by public companies (OJK 2020).

In addition to the fluctuating growth of the JCI value over the last five years, there has been a substantial increase in the number of investors. It is known from the average increase in Single Investor Identification (SID) of 39% per year. With the largest total SID growth of 31.9% in 2020. According to this, it can be seen that discounted market conditions encourage an increase in investors. As a basic principle of economics, when prices are lower or lower, the quantity demanded will be high (Sowell 2015).

With the significant fluctuations in the JCI value during 2016 to 2020, it is interesting for the author to conduct research on the January effect anomaly in the Indonesian stock market. The time span of this anomaly research is for the last five years, from 2016 to 2020. In addition, in order to obtain novelty from previous research (Kasdjan et al. 2017; Hendrawaty and Huzpurpooseh 2019; and Malini 2019), this research uses the panel data method. Meanwhile, the author chooses to research the LQ45 stock index because the index represents 64% of Indonesia’s stock market capitalization. This research purposes to identify the anomalous characteristics of the January effect and analyze its effect on abnormal stock returns in the Indonesian stock market.

Formulation of the Problem

The main problem in this research is the January effect anomaly that occurs in the Indonesian stock market, which is inconsistent. As an effort to find factual evidence along with the development of the stock market in the last five years, it is necessary to re-test using the 2016-2020 LQ45 index stock data. The problems to be studied can be formulated as follows:

1. What are the characteristics of the January effect anomaly that occurred in the Indonesian stock market?
2. What is the effect of the January effect anomaly on abnormal stock returns in the Indonesian stock market?

LITERATURE REVIEW

The Efficiency Market Hypothesis (EMH) Theory

The research on the Efficient Market Hypothesis (EMH) in the capital market was first conducted by Fama (1970). The theory divides market efficiency into three forms, namely weak, semi-strong, and strong market efficiency. In the form of weak market efficiency, current stock prices reflect historical stock data. The theory says that in a weak efficient market, investors cannot predict future stock prices by extrapolating (Cleary et al. 2011). The EMH theory gave birth to two efficient market models known to date. The two models are the fair game model and the random walk model. First, the fair game model assumes that market equilibrium conditions are recognized as expected returns. This assumption illustrates that capital market participants act only according to information available in the market and expect profits. Second, the random walk model assumes that the stock price changes are independent and the returns are identically distributed. In addition, the model assumes that with changes in stock prices there is a process of combining new information in the market to form a new balance every time.

Market Anomaly

The condition for deviation from the EMH theory is known as a market anomaly (Dzhabarov and Ziemba 2011). Market anomalies open up opportunities for exploitation of unnatural returns by investors who actively create or use stock trading patterns. So that other investors follow the flow of the pattern formed, and the execution of excess returns can be easily conducted. One of the market anomalies that can occur at a certain time or calendar anomaly is
the January effect (Cleary et al. 2011; Dzhabarov and Ziemba 2011; Damodaran 2012; and Mishkin and Eakins 2012).

The January effect shows that during December to January, the shares of companies with small market capitalization tend to experience abnormal price increases (Mishkin and Eakins 2012). This indicates that in January, the performance of the shares of companies with small market capitalization (small cap) outperformed the performance of the shares of companies with large market capitalization (big cap) (Cleary et al. 2011; Dzhabarov and Ziemba 2011). Damodaran (2012) states that the return in January is significantly higher than other months, and the January effect can be traced through the return in the first two weeks of trading in January. As Singh et al. (Singh et al.) recommends that stock market participants can take advantage of rising stock prices by taking positions to buy at the current price and sell when the price rises significantly.

**Market Return**

Yields or returns in the capital market are divided into three types (Damodaran 2012). The three types of returns are as follows:

1) Actual return

\[ R_{it} = \frac{P_t - P_{t-1}}{P_{t-1}} \] ................................. (1)

Remarks:

\[ R_{it} \] = actual stock return on t day
\[ P_t \] = stock price on t day
\[ P_{t-1} \] = stock price on t-1 day
\[ t \] = day 1, 2, 3,...,n

2) Expected return

\[ (R_{it}) = R_f + \beta_i E(R_{it}) - R_f \] ................................. (2)

Remarks:

\[ E(R_{it}) \] = expected stock return at t time
\[ R_f \] = risk free interest rate (BI rate)
\[ \beta_i \] = stock beta
\[ T \] = January - December

3) Abnormal return

\[ AR_i = \sum R_{it} - E(R) \] ................................. (3)

Remarks:

\[ AR_i \] = stock abnormal returns

**RESEARCH METHODS**

The method used is secondary data exploration with quantitative data analysis techniques. The analytical techniques include statistical descriptive tests (Black 2010; and Berenson et al. 2012), and multiple linear regression (Montgomery et al. 2012) in the panel data model (Biorn 2017). The software used to process the data is Microsoft Excel 2010 and EViews 9.
Research Location and Time

The research was conducted by conducting research on stocks in the LQ45 index, from January 2016 to December 2020. This research was conducted in March - August 2021.

Sampling and Data Collection Methods

The sample was obtained using a non-probability sampling method, with a purposive sampling technique (Khoidah and Wijayanto 2017). The criteria used in sampling are as follows:
1) shares listed on the Indonesia Stock Exchange during 2016 to 2020,
2) stocks included in the LQ45 stock index category during 2016 to 2020,
3) actively traded on the IDX during 2016 to 2020,
4) have stock beta data as published by the stock rating agency, Pefindo.
So that the number of stock samples obtained is 27 shares of public companies. Furthermore, data collection was conducted after the research sampling criteria were determined. Data collection is conducted via the internet by accessing the IDX website, finance.yahoo.com, and related official websites.

Hypothesis Development

Studies on the January effect anomaly have been conducted repeatedly in the Indonesian stock market. Research by Kasdjan et al. (2017) and Hendrawaty and Huzpurposeah (2019) on the LQ45 stock index still failed to find the January effect anomaly. Likewise, the research of Kartikasari (2016), Audina and Laturentte (2017), and Khoidah and Wijayanto (2017) which failed to find the January effect anomaly. The previous January effect anomaly research was mostly conducted on the LQ45 stock index. Previous research was conducted in a relatively short time span. In order to conduct research on the January effect anomaly according to the development of the Indonesian stock market, the research was conducted again on LQ45 indexed stocks from 2016 to 2020, using multiple linear regression analysis techniques using panel data.

1) Null hypothesis (H₀) : there is no January effect anomaly on stock returns in the Indonesian stock market.
2) Alternative hypothesis (H₁) : there is January effect anomaly on stock returns in the Indonesian stock market.

This research was conducted according to the research framework in Figure 1.
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Data Analysis Procedure

Statistical Descriptive Analysis

Statistical descriptive are used to summarize and display data for the purposes of data analysis from the data that has been collected (Berenson et al. 2012). There are three steps in the descriptive statistical method, namely the measurement of central tendency, variability, and the shape of the data distribution (Black 2010).

Panel Data Multiple Linear Regression Analysis

Panel data is a statistical term that shows a set of times series data with cross section data (Biorn 2017). Multiple linear regression equations consist of multiple regressors or independent variables (Montgomery et al. 2012). The multiple linear regression equations in this research are:

\[ y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + \beta_{11} x_{11} + \beta_{12} x_{12} + \beta_{13} d_1 + \epsilon \]  

the variables in the regression model show:

- \( y \) = return t year as dependent variable (t = 1,2,3,4,5)
- \( \beta_0 \) = constant value or intercept
- \( \beta_1 - \beta_{13} \) = independent variable regression coefficient value
- \( x_1 - x_{12} \) = actual return January - December
- \( d_1 \) = dummy variable for January effect anomaly
- \( \epsilon \) = standar error

Figure 1 Research Framework

**Indonesian Stock Exchange (IDX)**

**Indonesian Stock Market Condition**

**Composite Stock Price Index**

**Indeks Saham LQ45**

**Stock**

**12 Months Stock Trading (x)**

**Stock Performance Appraisal**

**Risk**

**Return**

**Actual Return**

**Expected Return**

**Abnormal Return**

\( (y) \)

**Results**

Panel data regression test

**Recommendations**

**Significant high return phenomenon in January**

**January Effect Anomaly**

**Statistical Descriptive Test**

**Karakteristik Anomali January Effect**

**Investors**
Panel Data Regression Model Estimation

The panel data method has three model choices according to the characteristics of the data or variables to be processed. The three models are common effects models (CEM) (Purnamasari 2020), fixed-effects models (FEM) and random-effects models (REM) (Biorn 2017). The estimation of the panel data regression model was conducted using the Chow test, Hausman test, and the Lagrange Multiplier test.

Chow Test (F Test)

The Chow test was conducted to select the CEM or FEM panel data regression model. In the Chow test, the decision-making method is as follows:
1) If F count < 0.05 then the selected model is FEM.
2) If F count > 0.05 then the selected model is CEM.

Hausman Test

Hausman test was conducted to select the FEM or REM panel data regression model. In the Hausman test, the decision-making method is as follows:
1) If the probability value < 0.05 then the selected model is FEM.
2) If the probability value > 0.05 then the selected model is REM.

Lagrange Multiplier Test

The Lagrange Multiplier test was conducted to select the CEM or REM panel data regression model. If the Chow test and Hausman test show that the chosen model is FEM, then this test is not needed. However, if the Hausman test shows the selection of the REM model or the Chow test shows CEM, it is necessary to carry out the Lagrange Multiplier test. In this test, the decision-making method is as follows:
1) If the probability value < 0.05 then the selected model is CEM.
2) If the probability value > 0.05 then the selected model is REM.

Data Feasibility Analysis

Normality Test

Normal data, if the data error rate is mean 0 and standard deviation 1 (Berenson et al. 2012). The research used the Kolmogorov Smirnov normality test. Data is normally distributed if it has a probability value greater than the value of (p-value > 0.05) (Black 2010).

Multicollinearity Test

Multicollinearity indicates that there are two independent variables in the regression model that are related, causing an error in the regression coefficient value (Siegel 2012). Symptoms of multicollinearity in the panel data regression model can be identified through the value of the correlation coefficient (r). If the value of r is greater than 0.9 (r > 0.9) then the model is identified as having symptoms of multicollinearity (Black 2010).

Autocorrelation Test

The autocorrelation test was conducted using the Durbin-Watson test. The Durbin-Watson test produces a Durbin statistic (DW) and p-value. Autocorrelation occurs if the DW value is less than the Durbin Lower (DL) value in the Durbin Watson table (DW < DU). There is no autocorrelation if the DW value is greater than the Durbin Upper (UP) value (Montgomery et al. 2012). In addition, autocorrelation occurs if the significant value obtained is less than 0.05 (p-value <0.05) (Kasdjan et al. 2017).
Heteroscedasticity Test

Heteroscedasticity test was conducted using the White test method. There is no symptom of heteroscedasticity if the significance value is > 0.05. Also, if the significance value is less than 0.05, it is known that heteroscedasticity occurs.

Hypothesis Test

T Statistical Test

The relationship between the influence of an independent variable on the dependent variable can partially be known through the significance value on the statistical t test (Montgomery et al. 2012). An independent variable \( x_i \) is declared to have a significant effect on the dependent variable \( y \), if the value of \( T_{\text{count}} x_i > T_{\text{table}} \), or the probability value (p-value) < 0.05. Meanwhile, an independent variable \( x_i \) is declared to have no effect on the dependent variable \( y \), if the value of \( T_{\text{count}} x_i < T_{\text{table}} \), or the probability value (p-value) > 0.05.

F Statistical Test

F Statistical test was performed to see the significance value of the regression model simultaneously. This test looks at the linear relationship between response \( y \) and all regressor variables \( x_1, x_2, x_3, \ldots, x_i \) (Montgomery et al. 2012). The dependent variables are declared to have a significant simultaneous effect on the \( y \) variable, if the value of \( F_{\text{count}} x_i > F_{\text{table}} \), or the probability value (p-value) < 0.05. Meanwhile, the dependent variables are declared to have no simultaneous significant effect on the \( y \) variable, if the value of \( F_{\text{count}} x_i < F_{\text{table}} \), or the probability value (p-value) > 0.05.

Coefficient of Determination (R²)

Variations in the regression model that can be explained by the regressor \( x \) are shown through the value of the coefficient of determination (R²) in the form of proportions. The value of R² is in the range of 0 ≤ R² ≤ 1, which means that the R² value of the regression model can be greater than 0, but it is impossible to reach a perfect value of 1. This is because the assumption of a regression model cannot explain the variability associated with pure error. . The closer the R² value is to 1, it indicates that the variability in \( y \) is mostly explained by the regression model (Montgomery et al. 2012).

RESULTS AND DISCUSSION

Statistical Descriptive Test

Statistical descriptive tests were conducted on the average monthly cumulative actual returns and annual abnormal returns of LQ45 index stocks from 2016 to 2020. The characteristics and descriptions of the distribution of monthly cumulative returns are presented in table 1.

Table 1 Descriptive Statistics of Average Monthly Cumulative Return of the LQ45 Index by Year

<table>
<thead>
<tr>
<th>Month</th>
<th>2016</th>
<th></th>
<th>2017</th>
<th></th>
<th>2018</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>January</td>
<td>-1.11%</td>
<td>11.51%</td>
<td>-0.18%</td>
<td>5.70%</td>
<td>8.64%</td>
<td>14.15%</td>
</tr>
<tr>
<td>February</td>
<td>6.16%</td>
<td>11.93%</td>
<td>3.09%</td>
<td>4.94%</td>
<td>-0.84%</td>
<td>4.31%</td>
</tr>
<tr>
<td>March</td>
<td>3.92%</td>
<td>7.50%</td>
<td>1.77%</td>
<td>6.53%</td>
<td>-9.83%</td>
<td>6.58%</td>
</tr>
<tr>
<td>April</td>
<td>0.08%</td>
<td>6.11%</td>
<td>1.24%</td>
<td>3.97%</td>
<td>-3.27%</td>
<td>7.94%</td>
</tr>
<tr>
<td>May</td>
<td>-2.24%</td>
<td>5.73%</td>
<td>1.16%</td>
<td>7.44%</td>
<td>1.63%</td>
<td>7.25%</td>
</tr>
<tr>
<td>June</td>
<td>6.52%</td>
<td>6.77%</td>
<td>1.23%</td>
<td>4.43%</td>
<td>-8.74%</td>
<td>9.51%</td>
</tr>
<tr>
<td>July</td>
<td>7.20%</td>
<td>11.08%</td>
<td>1.18%</td>
<td>9.80%</td>
<td>2.84%</td>
<td>8.64%</td>
</tr>
<tr>
<td>August</td>
<td>3.45%</td>
<td>7.22%</td>
<td>0.57%</td>
<td>7.86%</td>
<td>1.27%</td>
<td>10.87%</td>
</tr>
</tbody>
</table>
Table 1 shows that the highest average cumulative return in January occurred in 2018 and 2019. The two average cumulative returns were 8.64% and 9.29%. The average cumulative return in January was significantly high, followed by negative returns in the following months. This indicates the exploitation of stock returns in January. The pattern that occurred in 2019 is similar to the pattern that occurred in 2018. As according to Damodaran (2012), this condition is an anomaly of the January effect in both years. Meanwhile, in 2016, 2017 and 2020, the cumulative return value in January was not higher than other months. This indicates that the high return value in January does not occur every year.

The next effort to identify the symptoms of the January effect anomaly is to observe the distribution of abnormal stock returns during 2016 to 2020. The distribution of abnormal stock returns from 2016 to 2020 is presented in the following table:

### Table 2 Abnormal Descriptive Statistics of Monthly Stock Returns for the LQ45 Index 2016-2020

<table>
<thead>
<tr>
<th>Month</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>0.5%</td>
<td>0.3%</td>
<td>-2.0%</td>
<td>-1.8%</td>
<td>2.0%</td>
</tr>
<tr>
<td>February</td>
<td>-0.1%</td>
<td>-0.9%</td>
<td>-0.4%</td>
<td>-0.4%</td>
<td>2.6%</td>
</tr>
<tr>
<td>March</td>
<td>-0.8%</td>
<td>-1.2%</td>
<td>1.3%</td>
<td>0.1%</td>
<td>8.5%</td>
</tr>
<tr>
<td>April</td>
<td>-0.5%</td>
<td>0.2%</td>
<td>1.7%</td>
<td>-2.1%</td>
<td>-1.8%</td>
</tr>
<tr>
<td>May</td>
<td>0.9%</td>
<td>0.6%</td>
<td>-0.4%</td>
<td>2.2%</td>
<td>-1.6%</td>
</tr>
<tr>
<td>June</td>
<td>0.0%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>-1.8%</td>
<td>-2.3%</td>
</tr>
<tr>
<td>July</td>
<td>-0.2%</td>
<td>-0.8%</td>
<td>0.0%</td>
<td>-0.6%</td>
<td>-2.5%</td>
</tr>
<tr>
<td>August</td>
<td>-0.8%</td>
<td>-0.1%</td>
<td>0.5%</td>
<td>-0.8%</td>
<td>-0.7%</td>
</tr>
<tr>
<td>September</td>
<td>0.1%</td>
<td>1.1%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>2.3%</td>
</tr>
<tr>
<td>October</td>
<td>-0.3%</td>
<td>-0.3%</td>
<td>2.2%</td>
<td>-0.1%</td>
<td>-2.4%</td>
</tr>
<tr>
<td>November</td>
<td>1.6%</td>
<td>0.7%</td>
<td>-3.0%</td>
<td>1.9%</td>
<td>-3.4%</td>
</tr>
<tr>
<td>December</td>
<td>-0.4%</td>
<td>-0.5%</td>
<td>-1.2%</td>
<td>-2.0%</td>
<td>-3.0%</td>
</tr>
</tbody>
</table>

Source: Processed data (2021)

Table 2 shows that when the cumulative return value was significantly high in January 2018 and 2019, it resulted in a negative abnormal stock return value. Meanwhile, in the other three years, when there was no significant return in January, it resulted in a positive abnormal return or excess return. At this stage, it can be assumed that the January effect anomaly can cause negative stock abnormal returns or create a high potential risk of loss.

### Panel Data Regression Model Estimation

The first stage of the panel data model process is to select the best analysis model from three choices of common effects models (CEM) (Purnamasari 2020), fixed-effects models (FEM) or random-effects models (REM) (Biorn 2017). The best model selection is done through...
model estimation with Chow test, Hausman test, and Lagrange Multiplier test. The following are the results of the three tests presented in table 3.

Table 3 Estimation of Panel Data Regression Model

<table>
<thead>
<tr>
<th>Chow Test</th>
<th>Effects Test</th>
<th>Statistic</th>
<th>d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>0.9468</td>
<td>26.95</td>
<td>0.5451</td>
<td></td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
<td>31.1061</td>
<td>26</td>
<td>0.2243</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hausman Test</th>
<th>Test Summary</th>
<th>Chi-Sq. Statistic</th>
<th>Chi-Sq. d.f.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>21.3569</td>
<td>13</td>
<td>0.0662</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lagrange Multiplier Test</th>
<th>Test Hypothesis</th>
<th>Cross-section</th>
<th>Time</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breusch-Pagan</td>
<td>0.3119</td>
<td>115.1940</td>
<td>115.5058</td>
<td></td>
</tr>
<tr>
<td>Prob.</td>
<td>0.5765</td>
<td>0.0000</td>
<td>0.0000</td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed data (2021)

According to table 3, it is known that the Chow test produces a cross-section F statistic of 0.9468 and a probability of 0.5451, so the model chosen is the common effects models (CEM). Then the Hausman test produces a chi-square statistic of 21.36 with a probability value of 0.0662, the regression model chosen is random effects models (REM). After going through the Chow test and Hausman test, two models of panel data regression analysis options were obtained, namely CEM and REM. So, to be able to find the best model, a Lagrange Multiplier test is needed. Furthermore, the Lagrange Multiplier test with the Breusch-Pagan method produces a probability value of 0.5765. The best panel data regression model according to this test is REM.

Data Feasibility Analysis

Before performing the multiple linear regression test, it is necessary to test the classical assumptions so that the results of the regression equation get the right estimates. The results of the classical assumption test are presented in table 4.

Table 4 Classical Assumption Test

<table>
<thead>
<tr>
<th>Normality</th>
<th>Multicollinearity</th>
<th>Autocorrelation</th>
<th>Heteroscedasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-value Jarque-Bera = 0.170076</td>
<td>Correlation coefficient value (r) : -0.3 &lt; r &lt; 0.6</td>
<td>Durbin-Watson test value : DU &lt; DW &lt; 4-DU1.9330 &lt; 2.0013 &lt; 2.0670</td>
<td>chi-square probability value = 0.0940</td>
</tr>
</tbody>
</table>

Source: Processed data (2021)

Table 4 shows that the Jarque-Bera probability value is 0.170076 or greater than the alpha value (> 0.05). So it can be seen that the data is normally distributed. Then, the value of the correlation coefficient (r) is smaller than the limit of the correlation coefficient, 0.9. Also, the resulting chi-square probability value is 0.0940. Furthermore, the results of the Durbin Watson test show that the DW value generated by the regression model is 2.0013. While the DU value obtained from the Durbin-Watson table is 1.9330 and 4-DU is 2.0670. This means that there is no multicollinearity, heteroscedasticity, and autocorrelation in the panel data regression model used.

Hypothesis Test

Hypothesis test can be done after the selected panel data regression model, REM, has fulfilled the classical assumptions. The research hypothesis was tested using a panel data regression model involving cross-sectional data of 27 LQ45 stocks, 12 independent variables representing trading months, 1 dummy variable representing the January effect factor (significant return in January), as well as time-series data on annual stock returns from 2016 to 2020. The null hypothesis (H0) in this research is that there is no January effect anomaly effect.
on stock returns in the Indonesian stock market. While the alternative hypothesis (H1) in this research is that there is an anomaly January effect on stock returns in the Indonesian stock market. The following are the results of hypothesis testing as presented in table 5.

### Table 5 Hypothesis Test Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.0085</td>
<td>0.0008</td>
<td>-11.1741</td>
<td>0.0000</td>
</tr>
<tr>
<td>X1</td>
<td>0.0851</td>
<td>0.0058</td>
<td>14.6429</td>
<td>0.0000</td>
</tr>
<tr>
<td>X2</td>
<td>0.0607</td>
<td>0.0062</td>
<td>9.8056</td>
<td>0.0000</td>
</tr>
<tr>
<td>X3</td>
<td>0.0801</td>
<td>0.0047</td>
<td>17.0161</td>
<td>0.0000</td>
</tr>
<tr>
<td>X4</td>
<td>0.0793</td>
<td>0.0078</td>
<td>10.2117</td>
<td>0.0000</td>
</tr>
<tr>
<td>X5</td>
<td>0.0923</td>
<td>0.0069</td>
<td>13.3787</td>
<td>0.0000</td>
</tr>
<tr>
<td>X6</td>
<td>0.0504</td>
<td>0.0063</td>
<td>7.9420</td>
<td>0.0000</td>
</tr>
<tr>
<td>X7</td>
<td>0.0808</td>
<td>0.0058</td>
<td>13.9827</td>
<td>0.0000</td>
</tr>
<tr>
<td>X8</td>
<td>0.0847</td>
<td>0.0063</td>
<td>13.3482</td>
<td>0.0000</td>
</tr>
<tr>
<td>X9</td>
<td>0.1030</td>
<td>0.0081</td>
<td>12.7625</td>
<td>0.0000</td>
</tr>
<tr>
<td>X10</td>
<td>0.0826</td>
<td>0.0073</td>
<td>11.2663</td>
<td>0.0000</td>
</tr>
<tr>
<td>X11</td>
<td>0.1025</td>
<td>0.0055</td>
<td>18.6671</td>
<td>0.0000</td>
</tr>
<tr>
<td>X12</td>
<td>0.0827</td>
<td>0.0071</td>
<td>11.6029</td>
<td>0.0000</td>
</tr>
<tr>
<td>D1</td>
<td>0.0040</td>
<td>0.0021</td>
<td>1.8810</td>
<td>0.0624</td>
</tr>
</tbody>
</table>

R² = 0.9474, Mean dependent var = -0.0014
Adjusted R² = 0.9417, S.D. dependent var = 0.0248
S.E. of regression = 0.0060, Sum squared resid = 0.0043
F-statistical = 167.5086
Prob(F-statistical) = 0.0000

Source: Processed data (2021)

According to table 5, it is known that the authors tested the effect of 12 months of trading on stock abnormal returns during 2016 to 2020. In addition, the authors added a dummy variable in the panel data regression model. This purposes to identify the effect of significant returns in January that occurred in several LQ45 stocks on stock abnormal returns.

### T Statistic Test

The magnitude of the influence of each independent variable on the dependent variable is measured through the t-statistical value. According to table 5, it is known that the independent variable trading month X1 to X12 has a partially significant positive effect on stock abnormal returns, which is indicated by a significance value of 0.0000. This means that the higher the actual return each trading month, the higher the abnormal stock return that will be obtained. Meanwhile, the independent variable D1 gives a significance value of 0.0624 or greater than the 0.05 alpha level. This means that the significant January return (January effect) that occurs in some LQ45 stocks does not show a significant effect on abnormal stock returns. With no significant effect of January effect found on stock abnormal returns, it can be concluded that the Indonesian stock market is still classified as a weak form of efficient stock market.

### F Statistic Test

Meanwhile, the effect of the independent variable on the dependent variable is simultaneously measured through the statistical F value. The results of multiple linear regression of panel data as shown in table 5, show that the probability value of the F statistic produced is 0.0000. This shows that the independent variables simultaneously affect the dependent variable.

### Coefficient of Determination (R²)

The coefficient of determination or R² of the panel data multiple linear regression model that has been conducted is 0.9474, as presented in table 5. This shows that 94.74% of the variance of the dependent variable can be explained in the model. While the other 5.26% is explained by other factors.

Risma Dewi; Farida Ratna Dewi. January Effect Analysis on The Indonesian Stock Market (Case Study of the 2016-2020 LQ45 Index Stock)
Managerial Implications

This research found an indication of the exploitation of stock returns in January 2018 and 2019 in a patterned manner. In terms of obtaining high returns in January, this provides a significant advantage for investors. However, the problems that occurred as a result of this made the performance of the stock market decline and were considered unfavorable in trading months other than January. Evidenced by the increasing number of trading months with a negative stock return value. Thus, causing deviations from efficient market conditions. Meanwhile, in 2016, 2017 and 2020 there was no January effect anomaly. Most trading months in 2016, 2017, and 2020 showed positive stock returns.

The recommendation for investors is to rearrange the stock trading strategy in the trading year indicated by the January effect anomaly and the trading year not indicating the January effect anomaly. The trading year indicated by the January effect anomaly can be assessed from the performance of stock returns in the first two trading weeks of January (Damodaran 2012). If the stock return value has shown a significant growth performance, it has the potential to get a high return in January. Furthermore, to reduce potential losses after exploiting returns in January is to refrain from selling shares in the months after January. Meanwhile, in the January effect anomaly, the stock trading strategy was not indicated to follow the current market mechanism (Sowell 2015). A strategy to get a return or capital gain by selling shares when the price is higher than the purchase price.

Meanwhile, according to multiple linear regression test, it was found that the January effect anomaly had no significant effect on the performance of abnormal stock returns. Although the trading months from January to December have a significant effect on the performance of abnormal stock returns. This is because the January effect anomaly only occurred in some stocks, with the highest occurring in 2018 and 2019. It can be concluded that the Indonesian stock market is still more resistant to deviations or anomalies that occur. Thus, the recommendation for investors is not to overreact to the January effect anomaly. As well as maintaining an efficient condition of the Indonesian stock market by creating a fair investment and trade climate.

CONCLUSION

This research found that the January effect anomaly only occurred in certain stocks on the LQ45 stock index during 2016 to 2020. The highest January effect anomaly occurred in 2018 and 2019, with an average rate of return on the LQ45 index stock in January in both years. reached a significantly high figure. However, according to the results of the multiple linear regression test, it was not found that there was a significant effect of the January effect anomaly on the level of abnormal stock returns. This is because the years indicated by the January effect anomaly are only 2018 and 2019, while 2016, 2017 and 2020 are not indicated by the January effect anomaly. It can be concluded that the January effect anomaly has no effect in the long term for the last 5 years. And the condition of the Indonesian stock market is still classified as an efficient market in the long term.

REFERENCES


