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Comparative Analysis of Stock Returns before and after New Year (Case Study of a Manufacturing Company Listed in Indonesia Stock Exchange)

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Abstract:
This study was aimed to observe the difference in stock returns before and after New Year at a manufacturing company listed at Indonesia Stock Exchange. Data collected were analyzed with paired t-test using SPSS version 20.0. The results showed that there was no significant difference in terms stock returns before and after New Year. Stock return of the company decreased slightly by about 0.12076 after New Year from 2015 to 2017.

Keywords: *Stock returns, study event*

1. Introduction

Stock market is an economic entity that greatly influences the economic growth. It is a place that accommodates large economic transaction important for a country's economy. Indonesia Stock Exchange grows continuously causing investors to focus in investing in Indonesia Stock Exchange, especially for business purposes.
Investors always aim for stock returns from their trading activities at the stock market. Trading activities performed include buying and selling stocks. Investors always strive for getting positive stock returns and avoiding negative stock returns. The main reason for investors to invest at stock market is to gain certain level of profit. The profit collected by a businessperson from his investment is called stock returns. The returns are in the form of dividend and capital gain (Tendellin, 2001).

According to Budiarto and Baridwan (2014: 19), factors affecting stock price are earning per share, interest rate, total cash dividend collected, total profit gained by a company, risk level and returns, and events that can affect the stock exchange. Event study is a study that observes the market reaction towards an event whose information is published publicly. Assessment of the information of an event is aimed to evaluate the reaction given to some information. When an announcement contains information, it is expected that the stock market will react when the information is received by the public. The public usually reacts towards change of price, trading volume, trading frequencies, and returns from related securities.

According to Mishkin (2008: 221), one of the events that can affect public reaction is the New Year that will eventually affect the perception of the investors at the stock market. The investors are urged to sell their shares before the end of the year, during December, and when the new year starts at January, they can re-buy their shares.

Lamoreux and Sanger in Chomariah *et al*. (2004: 3) stated that when trade is performed on the last day or the first day of a year, the stock returns are usually higher than other days. This proves the effect of New Year on OTC market, where stock returns at the start of a month Is higher than the rest of the month.

Manufacturing companies are part of the industry that keeps growing healthily in the business world nowadays, whose production process is uninterrupted starting from raw material purchase, processing of the raw material, until they get ready-to-sell products. Moreover, manufacturing industries are among the most active types of industry in terms of trade at the Indonesia Stock Exchange.

The current study is not a new concept, but it was a replicate of a previous research that had observed and analyzed the difference in term of stock returns before and after public holidays, both religion-based holidays and national holidays, on the Indonesia Composite Index at Indonesia Stock Exchange. The results showed that there was a difference in stock returns before and after both religious-based holidays and national holidays (Latifa and Prasetiono: 2012).

Therefore, the research question in this study was: "IIs there a difference in terms of stock returns before and after the New Year in manufacturing industry listed at Indonesia Stock Exchange.

2. Literature Review

2.1. Market Efficiency

According to Tandelilin (2011: 112), an efficient market is a market where the price of securities that are traded reflects all the available information. Husnan (2005: 260) also defined an efficient stock market as a market where the prices of the securities reflect all the relevant information. The faster new information is reflected on price of securities, the more efficient the stock market. Therefore, it is difficult (or even impossible) for investors to get profit above normal consistently by performing trade transactions at the stock market.

Jogiyanto (2010: 593) explained that an efficient market could be achieved due to the following events:

- Investors are the price takers, which mean that as traders, an investor cannot individually affect the price of securities. The price of securities is affected by many investors that create the demand and supply condition.
- Information is spread to all traders simultaneously in inexpensive way.
- Information is available randomly and the announcement is also done randomly, so that investors cannot predict when the company issuing the securities will announce new information.
- Investors react fast in utilizing the information available, so that the price of securities changes accordingly, suitable to reflect the information available in order to achieve a new balance.

According to Fama (1970) as cited by Halim (2014: 101), an efficient market can be classified into several criteria:

- Weak efficiency: showing that all past information (e.g. price and trade volume) is reflected in current price so that investors cannot predict the market price of stocks in the future using historical data as usually performed with technical analysis.
- Semi-strong efficiency: showing that stock prices are affected not only by the data on price and volume of trade, but also by all published information, for example dividend, stock split, stock dividend, earning per share, etc.
- Strong efficiency: showing that all information, either published or unpublished, is reflected in the current price of securities. In this market, there is no investor that can get abnormal shares.

2.2. Signaling Theory

According to Brigham and Houston (2001: 36), signal is an action taken by a company to guide investors on how the management views the company's prospect. The signal is in the form of information on what has been done by the management to achieve the objectives of the owners. Information published by a company is important since it influences the decision to invest from other parties. The information is important to investors and business people since it provides views on the past, the current, and the future of the company.

According to Marwate (2001) in Susilowati (2006), the signal theory is the company's activity in providing information to investor on substantial return prospect in the future. The information acts like a signal from the company to the public that the company has good future prospect. Increase in returns can be predicted and provide signal on short term and long-term profit. The analysis used to get the information can also be used to predict long term earning.

2.3. Event Study

Kothari and Warner in Halim (2014: 117) stated that event study is focused on the influence or the effect of a 'publication' in short term in providing relevant understanding on the company's policy and decisions. According to them, even study reflects the effect of announcement of a policy or decision taken by the company.

In the literatures of financial management, a company's policy includes three major decisions: investment decision, financing decision, and dividend decision.

Not only based on announcement or policy, event study also discusses and observes events that can affect stock market in short term. The events can be political events, social events, natural disasters, or religious ceremonies.

All the events can bring effects and affect decision-making process from the investors in deciding on short-term investment, especially for investors who pursue capital gain.

2.4. Stock Returns

According to Tandelilin (2012: 102), stock return is a factor that motivates investors to invest and it is also considered as a nice payback for investors who dare the risks of investments. Returns can come from two main sources: yield and capital gain (loss). Yield reflects cash flow or income gained periodically from an investment. Meanwhile, capital gain (loss) as the second component in return is the increase/decrease of the price of a share that can give profit or loss for investors.

According to Hartono (2010: 205), return is a result of an investment. Stock returns is the gap of stock price between the price at the end of t period with the price at the beginning of period (t-1_. He then classified returns into two types:

2.4.1. Realized Return

Return that is calculated based on historical data. Realized return is important in calculating the company's performance and it is used as a base in deciding return and risk in the future.

2.4.2. Expected Return

Return that is expected in the future and it is still uncertain. Expected return is the profit expected by an investor in the future from certain amount of investment he has made.

According to Arieyani in Wandira (2013: 20), the pattern in dividing stock returns is as follows:

2.4.3. Intraday Effect

It explains the differences in the pattern of stock returns per minute during active trade session at the stock market. A stock return is automatically higher or lower at certain times in a trade day.

2.4.4. Daily Pattern

Daily pattern refers to daily stock returns pattern in a week, where a stock return is systematically higher or lower on certain days in a week.

2.4.5. Holiday Effect

This pattern shows the increased stock returns on trade day one day before a national holiday.

2.4.6. Turn of the Month

This pattern shows the different (increase) of stock returns on days before and after the end of a month.

2.4.7. Monthly Pattern

Monthly pattern refers to monthly stock returns in a year, where a stock return is systematically higher or lower on certain months in a year.

According to Wibowo and Adorini (2006: 20), daily returns (individual returns) are the daily profit gained from each stock. An individual return is a percentage of the current stock price divided by the previous stock price.

$$\boldsymbol{Stock\ Returns} = \frac{\boldsymbol{Pt - Pt - 1}}{\boldsymbol{Pt - 1}} \mathbf{x\ 100}\%$$

Notes:

Pt = Current price of a stock

Pt-1= Old price of the stock

Periodical effect that affects daily returns can be explained in four stages:

- *Settlement period hypothesis:* the price tends to increase on the day of settlement payment.
- *Calendar time* or *trading time hypothesis:* returns on Monday are the accumulation of returns on Saturday and Sunday. Therefore, the return on Monday is expected to be bigger than other days.
- *Information flow hypothesis:* negative company tends to withhold negative information on weekend and provide two days for the investors to absorb the negative information. Next, on Monday, investors react towards the negative information they received in the previous week so that the returns on Monday get negative.
- Retail investor trading hypothesis: the trade activity is high on small-size trade on Monday and it is low for large size trade.

2.5. Previous Studies

A previous study on similar topic were performed by Rachmawati (2005) titled "The effect of New Year Holiday and Eid Holiday on abnormal returns in consumer goods industry at Indonesia Stock Exchange in 1998-2003". The results showed that there was no difference in abnormal returns before and after New Year and Eid holidays and there was no difference either in abnormal returns before New Year and Eid holidays as well as after New Year and Eid holidays.

A study was performed by Latifa and Presetiono (2012) titled "The analysis of different stock returns before and after religious holidays and national holidays on Indonesia Composite Index at Indonesia Stock Exchange in 2007 – 2011". The results showed that there was no difference in stock returns before and after religious holidays, there was no difference in stock returns before and after national holidays, there was no difference in stock returns before religious holidays and national holidays, and there was no difference in stock returns after religious holidays and national holidays in the Indonesia Composite Index at Indonesia Stock Exchange in 2007 – 2011.

Another study was performed by Swari and Wiksuana (2013) titled "Analysis of stock performance before and after stock split on companies listed at Indonesia Stock Exchange. The results showed that there was no significant difference in stock return before and after stock split.

2.6. Hypothesis

Based on literature review and previous studies, the hypothesis of the current study was that there was difference in stock returns before and after New Year on manufacturing companies listed at Indonesia Stock Exchange.

3. Research Methodology

3.1. Sample and Population

Population in the study was all 145 manufacturing companies listed at Indonesia Stock Exchange in 2015-2017. Sampling method used in the study was purposive sampling, using the following criteria:

- 10 manufacturing companies that are listed and perform active trades at Indonesia Stock Exchange in 2015-2017. Companies that perform no corporate business during the period of the study.

3.2. Operational Definitions

Variable definition is the definition and theoretical explanation of a variable to be observed and measured. Based on variable identification, operational definitions of variables used in the study are as follows:

- Stock returns are returns received by companies for the funding they have invested:

$$\textbf{\textit{Stock Returns}} = \frac{\boldsymbol{Pt - Pt - 1}}{\boldsymbol{Pt - 1}} \textbf{x } \mathbf{100}\%$$

Notes:
Pt: current stock price
Pt-1: stock price in the previous period

- The term New Year used in the study is limited to the New Year holidays of 2015-2017.

3.3. Data Analysis

Based on the problems observed and hypothesis tested, the analytical tool was Paired Sample t-test, with the window period of stock returns 15 days before and after the New Year.

According to Gujarati (2004: 165), paired sample t-test was performed by comparing the difference between two average values calculated using standard error and average differences of two samples. To measure and analyze the data, IBM SPSS Version 21.0 was used. Paired sample t-test was used to determine if there was difference in stock returns 15 days before and after the New Year in manufacturing companies listed at Indonesia Stock Exchange, with the calculation formula as follows:

$$t = \frac{X_1 - X_2}{\sqrt{\frac{S_2 2}{n_1} - 2r\left(\frac{S_1}{\sqrt{n_1}}\right)\left(\frac{S_2}{\sqrt{n_2}}\right)}}$$

Notes:
X_1 =average values from before New Year
X_2 = average values from after New Year
S_1 = standard deviation in data before New Year
S_2 =
Standard deviation in data after New Year
S_1^2 = Variance of variable 1
S_2^2 = Variance of variable 2
R = Correlation between samples

4. Results and Discussion

4.1. Results of Analysis

In this study, the hypothesis was tested using paired sample t-test, since this type of analysis is very popular to be used in pre-post type of study. The difference test is used to evaluate the change within a sample at two different observation periods to see the difference before and after a change. The change meant in the current study was New Year holiday. The paired sample difference test was used to know if there is a difference between the average values of the related samples.

In the study, descriptive analysis and hypothesis testing for data collected from 2015-2017 were performed with SPSS 20.0 using paired-sample t-test with $\alpha = 0.05$.

4.1.1. Descriptive Statistics

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Sebelum	.0285	450	2.79189	.13161
	Sesudah	-.0922	450	3.27762	.15451

Table 1
Source: SPSS data

Based on Table 1, it can be seen that average stock returns before and after New Year holiday was 0.0295, while average stock returns after New Year holiday was -0.0922. This data shows that there was a decrease by 0.1207 in average stock returns after New Year holidays.

4.1.2. Hypothesis Testing

This study used paired sample t-test to test the hypothesis, as can be seen in Table 2.

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	sebelum & sesudah	450	.067	.159

Table 2
Source: SPSS data

Table 2 shows that there was correlation in stock returns before and after New Year holiday with correlation value of 0.067 or 6.7% and significance level of 0.159.

Paired Samples Test									
	Paired Differences						t	Df	Sig. (2-tailed)
	Mean		Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	sebelum – sesudah	.12076	4.16167	.19618	-.26480	.50631	.616	449	.539

Table 3
Source: SPSS data

Based on Table 3, paired sample t-test shows that there were mean values of 0.12067. The t coefficient was 0.616 in terms of stock returns variable before and after the New Year holiday, which meant that there was no significant difference in terms of stock returns before and after the New Year holiday. This conclusion was taken from the fact that the significance level was only 0.539, and thus, since the value was > 0.05, so H_0 was rejected. In other words, there was no significant difference in stock returns before and after New Year holiday.

5. Discussion

The objective of the study was to analyze the differences in terms of stock returns before and after New Year holiday by comparing data from 15 days before and after New Year holiday.

Based on the analysis of data collected from 10 manufacturing companies with daily windows period, the authors compared the stock returns obtained by the companies.

With significance level of 0.539, H_0 was rejected since the significance value was larger than $\alpha = 0.05$. Therefore, there was no significant difference between stock returns before and after the New Year. Stock returns after New Year was decreased insignificantly for 0.1207, which means that New Year negatively affected the stock returns. The market did not react towards New Year holiday or the New Year holiday did not affect stock returns. Thus, the hypothesis that stated that there was a difference in stock returns before and after New Year was considered accepted and proven.

The results were in accordance with the results from Swari and Wiksuana (2013) in their paper titled "Analysis of stock performance before and after stock split in companies listed at Indonesia Stock Exchange". Their results showed that there were no significant differences in stock returns before and after stock split.

Insignificant negative stock returns illustrate the negative investor sentiments in January. Christmas holiday in December and New Year holiday in January causes a relatively long holiday with no trade at the stock exchange. Investors get concerned so that they tend to let go of their stocks, thus the returns become negative. During the two months, people celebrate the holidays grandly and they spend relatively high budget for it. Therefore, investors tend to withhold or even sell

their investment in order to cover their spending for the holidays. This action relates to the unstable macro economy situation, so that investors choose to be active back at the stock market after the long holiday after the new year.

The investors also need stable and conducive environment for their trade. Several sentiments that become their concerns are the policy of the US government and the significantly fluctuating price of petrol. The prices of several commodities were re-strengthened in 2016 compared to 2015, with minor decrease at the beginning of 2017 that make investors take the wait-and-see action to observe the trend in 2017. It can be observed that the stock trade in Indonesia is still unstable and highly affected by the macro economy. Therefore, investors tend to pay attention to the macro economy rather than the daily stock trade.

The negative market reaction shows that there was no change in request of stocks, causing fluctuation in stock price and it leads to declining stock price and negative stock returns. New Year event does not have sufficient information to be anticipated by the market that may affect their stock returns.

6. Conclusion and Suggestions

6.1. Conclusion

This study was aimed to research on differences in stock returns before and after New Year celebration. Based on the results, it can be concluded that there were no significant differences in stock return before and after New Year. The average of stock returns before and after New Year in 2015-2017 decreased not significantly by 0.12076.

6.2. Suggestions

Suggestions resulted from this study are:

- This study is expected to be beneficial for investors in making decisions or reacting to information that is published, so that they are more aware of the information and perform a pre-analysis to any investment offered.
- Companies providing securities are expected to maintain the price of their stock to be within optimal trading condition.

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