Analysis the Influence of Day of the Week, Monday, and Weekend Effect of on Seasonal Anomaly in in Stock Return: Evidence of Companies on LQ45 Indonesia in Indonesian Stock Exchange

Muslim A Djalil, Murkhana, M.Rizal Yahya, Qurratul Aini
Accounting Department, Faculty of Economic and Business, Syiah Kuala University, Banda Aceh, Indonesia

Keywords: Day of the Week effect, Monday Effect, Weekend Effect, Return

Abstract: This study aims to determine the occurrence of day of the week effect, the occurrence of monday effect, the occurrence of weekend effect, and the effect of day trading on the daily return of shares in the Indonesia Stock Exchange. The sample used in this research is daily return data of company stock LQ 45 period of February 2017 until January 2018 which amounted to 45 company. Data analysis technique used is one sample t-test for day of the week effect, independent sample t-test for Monday effect and weekend effect, and multiple linear regression statistical tool is employed to find out the effect of trading day to daily stock return. The results showed that there was no significant difference between daily stock return on trading days in a week on the Indonesia Stock Exchange. Then, there is Monday Effect on the trading of shares in Indonesia Stock Exchange, there is a weekend effect on stock trading in Indonesia Stock Exchange, and also there is influence of trading day to daily return of shares in Indonesia Stock Exchange.

1 INTRODUCTION

The capital market is one of the alternative means to collect long-term funds from the community as investors in supporting the development of a country. The community as an investor will see a profit from every trading activity that occurs in the capital market, while the company can raise funds from the community to overcome financial difficulties experienced. The capital market, as well as a means to collect funds for the company, either a container of investment for investors. Therefore, for creating a good investment climate and enforcement implementation and good supervision then there must a institutions that regulate (Putra and Ardiana, 2016). In capital market, there is stock return which is an advantage gained by investors who invest their shares in the stock exchange. The stock return can be the difference of the acquisition price of the stock with the release price of the stock. Usually shareholders want the high stock returns, very high stock returns are commonly termed with abnormal stock returns (Kasdjan, Nazarudin, and Yusuf, 2017). While according Hartono and Jogiyanto (2007), return is the result that obtained from investment or level of profits enjoyed by investor from his investment. Thus, the stock return is the rate of return that will be obtained by investors for their investment in a company's stock.

Along with the wants and needs of shareholders of this high stock return, the market will be affected. As the legal concept of demand, where the demand for an item is higher, then the price of the goods will also be higher. Thus, there is a possibility of changes in stock prices every day in a week. This leads to differences in stock investment decisions in certain days. This phenomenon is commonly termed the day of the week effect. On the Indonesia Stock Exchange there are 5 trading days (Monday, Tuesday, Wednesday, Thursday, Friday) and 2 days without trading (Saturday and Sunday), (Kasdjan, Nazarudin, and Yusuf, 2017). In addition, the influence of seasonal anomalies has also been proven by one of the lecturers of the Faculty of Economics, University of Riau, which proves the existence of Monday effect on stock return JH in
Indonesia Stock Exchange. From the regression analysis obtained some conclusions. First, Monday’s return is different from any other day. Second, the lowest return is concentrated in the second week at the beginning of the month. Third, the negative return on Monday is affected by the return on the previous Friday. Fourth, the emergence of the Monday effect is not the same throughout the time of data observation (Azlina, 2009).

In stock return there are significant difference of influence, which is proved by previous research conducted by (Iramani and Mahdi, 2006), (Widodo, 2008), (Akhar, 2009), (Rita M., 2009), (Ambarwati, 2009), (Maria and Syahyunnan, 2013), (Lutfiaji, 2013), (Saputro, 2014) which found that trading day had a significant effect on stock return. While research conducted by (Prasetyo, 2006), (Pratomo, 2007), (Arieyani, 2011), (Wijaya dkk. 2013) found that trading days have no relationship to stock returns.

Then, one of the strategies or techniques commonly used by shareholders for decision-making in stock investments is the market anomaly, which is an unanticipated event or event and this offers the shareholder an opportunity to earn an abnormal share return (Kasдан, Nazarudin, and Yusuf, 2017). This market anomalies include Seasonal Anomalies, Accounting Anomalies, Company Anomalies, Event Anomalies.

In this research I chose Seasonal Anomalies as an research object because according to Trisnadi and Sedana (2016), the market anomaly violates the hypothesis about the concept of capital market efficiency that states investors can not expect price and return based on stock prices in the past caused by a random return, but can be predicted based on the effect of certain calendars.

While seasonal anomalies is a seasonal market which is seasonal, an anomaly that has the form of deviation of efficient market hypothesis. Seasonal anomalies or calendar effect itself intends a market anomaly or economic effect that appears related to the calendar. These effects include different behaviors of the stock market on different days of the week, different times of the month, and different time of year/season (Endarwati, 2017).

In general, efficient capital market situation shows the relationship between market price and market form. Later, the development of the company's financial theory in this capital market over the last few decades has been growing very rapidly. Then later put forward the proposed Efficient Market Hypothesis or better known as Efficient Market Hypothesis which may be one of the most famous breakthroughs proposed by Eugene F. Fama in 1970 (Harijanto and Kurniawati, 2013).

The Efficient Market Hypothesis states that an efficient market is a market where the prices of all securities traded by investors have reflected all the information. This information means the information that comes from the past, present, or information that is opinion or rational opinion circulating in the market that can affect the price movement (Tandelilin 2010). If a market is in an efficient state, then the existing security prices should move at random (Random Walk) and unpredictable (Harijanto and Kurniawati, 2013).

Many of the findings suggest empirical evidence that supports the concept of efficient capital markets. In it, the conclusions obtained for each study show varying results between each other (Harijanto and Kurniawati, 2013). In his research, Dwi Cahyaningdyah (2005) found the phenomenon of Day of the Week Effect on the Jakarta Stock Exchange, with the lowest return occurred on Monday (Monday Effect) and the highest return occurred on Friday (Weekend Effect). Then, Ricky Chee-Jiun Chia dkk (2008), also found the phenomenon of Day of the Week Effect in several Capital Market in Asian Region like Capital Market of Taiwan, Hong Kong, Singapore, and South Korea. The study found that the rate of return for each trading day differed significantly, including Monday’s tend to be negative and Friday’s return which tended to be higher than in other days.

Lutfur Rahman (2009) who conducted the research on Dhaka Stock Exchange, found that trading day had a significant effect on stock return on Dhaka Stock Exchange. Rahman explained that the schedule of news announcements related to economic conditions affect investors' behavior in conducting stock transactions, thus forming a daily pattern of stock returns. After that, there is a testing of January Effect that ever done by Wing-Keung Wong, et al (2006) on the Singapore Stock Exchange for the purpose of re-examining the existence of Calendar Anomalies in the Singapore Capital Market using the latest data divided into two sub-periods, before the crisis and after the 1997 crisis. Through this research, it was found that the anomaly phenomenon in the Singapore Capital Market increasingly weakened its existence. The study found that the January Effect phenomenon that was positive in the pre-crisis period turned into a negative value in the period after the crisis.

The objectives of this research are to investigate the effect of difference of return that happened on Day of the Week, the occurrence of Monday,
Weekend, and trading day on daily stock returns in Indonesia Stock Exchange.

2 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Efficient Market Theory

According to Eugene Fama (1965) and Sahoo (2018) the efficient market hypothesis (EMH), popularly known as the Random Walk Theory, is the proposition that current stock prices fully reflect available information about the value of the firm, and there is no way to earn excess profits (more than the market overall), by using this information. The term market efficiency is used to explain the relationship between information and share prices in the capital market literature.

2.2 Seasonal Anomalies

Seasonal anomaly is an anomaly to the calendar pattern or time pattern in stock trading day (Kasdjan, Nazarudin, and Yusuf, 2017). In financial theory there are four kinds of Market Anomalies, namely Company Anomaly, Seasonal Anomaly, Event Anomaly and Accounting Anomaly according to Levi (1996) in (Apriolita, Gumanti, and Swastika, 2011). Seasonal anomalies appear dependent on the time. Stock prices on seasonally based companies, such as trading or convection firms will tend to increase on days when the season is busy.

2.2.1 Day of the Week Effect

The day of the week effect is the difference in return between Monday and the other days of the week significantly (Damodaran, 1996). Usually a significant negative return occurs on Monday while a positive return occurs on other days. The effect of day trading on stock return is an interesting phenomenon to be noticed. This phenomenon is part of the anomaly of efficient market theory. In efficient market theory states that stock returns are not different on every trading day. But the day of the week effect phenomenon states that there is a difference of return for each trading day in a week where on Monday tend to create a negative return.

2.2.2 Monday Effect

Monday effect is one part of The Day of the Week Effect that is a seasonal anomaly (calendar effect) that occurs in the financial market when the stock return is significantly negative on Monday Mehdian and Perry in (Budileksmana, 2005). The anomaly violates the hypothesis of market efficiency of weak form. The market efficiency hypothesis of weak form considers that the information contained in the historical stock price is fully illustrated in the current stock price and the information cannot be used to obtain excess return Elton and Gruber in (Budileksmana, 2005).

2.2.3 Weekend Effect

Weekend effect is a late Sunday effect resulting in a symptom showing that stock returns on Friday will be higher than other trading days, on the contrary Monday will show a lower return (Tandelilin, 2001). Weekend effect is a phenomenon in financial markets where stock returns on Monday are significantly lower than last Friday. Some theories that explain the effect of attributes tendency for companies to release bad news on Friday after the market close to stock prices depressed Monday.

2.3 Stock Return

Stock Return is the rate of return (profit/loss) on capital investment in the form of reward. Returns in the form of profits earned by shareholders are called capital gains, while the loss return is called capital loss (Yatmi, Astuti, and Widarno, 2016). Return is profit or an investment that is usually expressed as annual percentage rate. Return of stock represents the expected rate of return on stocks invested in stocks or multiple stock groups through a portfolio. This stock return can serve as an indicator of trading activities in the capital market.

2.4 LQ45 Index

The LQ 45 or Liquid 45 index is the best company of 45 stocks in Indonesia with large market capitalization and high liquidity, where the shares are actively traded by investors, thus making the LQ 45 index as a stock index sensitive to the presence of information that entered into the market (Trisnadi and Sedana, 2016).

Based on previous research, it can be formulated the following research framework as shown in Figure 1 as follows:
The hypotheses of this research are that the occurrence of Monday, weekend, and trading day have either simultaneous or partial effect on daily stock returns in Indonesia Stock Exchange.

3 RESEARCH METHODOLOGY

3.1 Research Design

The research design is defined as the process of designing research in such way which requisite data can be collected and analyze to get the solutions. The various aspects of research design which involve and related to decision are concerning to purpose of study, study setting, type of investigation, extent of researcher interference, unit analysis and time horizon (Sekaran and Bougie, 2010).

3.2 Research Population and Sample

The Population of this research is all listed companies that entered LQ45 Index for the period February 2017 until January 2018. Population refers to events, entire group or things of interest which researcher desires to investigate (Sekaran and Bougie, 2010). In order to guarantee the representation of the variables to be tested, then the sample are selected by the method of purposive sampling. Criteria in sampling are companies that remain/consistently listed in the LQ 45 Index in the February 2017 to January 2018 period, which amounted to 45 companies.

3.3 Source and Data Collection

The data used in this study is quantitative data sourced from secondary data that has been published by the Indonesia Stock Exchange that is in the form of company data included in the LQ 45 index and the closing price of daily stocks of companies included in the LQ 45 index during the period February 2017 until January 2018. Source of data obtained from the website of Indonesia Stock Exchange in www.yahoofinance.com. This research is using documentation method. Data collection begins with a preliminary research stage, which is to study literature by studying books and literature, economic and business journals, and other reading related to the capital market. At this stage is also done assessment of required data, availability of data, and description how to obtain data.

3.4 Variable Operationalization

3.4.1 Dependent Variable (Y)

Return of stock used in this research is daily stock return calculated on the basis of closing price on every trading day. The formula is (Hartono J., 2000):

\[ R_t = \frac{P_t - P_{t-1}}{P_{t-1}} \]

\[ R_t = \text{The actual return of stock on day } t \]

\[ P_t = \text{Stock price on day } t \]

\[ P_{t-1} = \text{Stock price on day } t - 1 \]

3.4.2 Independent Variable (X)

3.4.2.1 Day of the Week Effect

The value of the day of the week effect or trading day stock return is done by calculating the daily stock return from the sample of the company (Sulistianingsih, 2016).

\[ R_{mond} = \frac{CP_{mond} - CP_{friday}}{CP_{friday}} \]

\[ R_{tuesday} = \frac{CP_{tuesday} - CP_{mond}}{CP_{mond}} \]

\[ R_{wednesday} = \frac{CP_{wednesday} - CP_{tuesday}}{CP_{tuesday}} \]

\[ R_{thursday} = \frac{CP_{thursday} - CP_{wednesday}}{CP_{wednesday}} \]

\[ R_{friday} = \frac{CP_{friday} - CP_{thursday}}{CP_{thursday}} \]
3.4.2.2 Monday Effect

The reason of the Monday effect can be seen from the side of investor’s psychology, where in making investment decisions not only through economic rational consideration and objective data, but also influenced by several conditions such as emotions, certain psychological conditions, and the mood of each investor (Maulaya, 2016).

\[ R_{\text{Monday}} = \frac{\text{IHSI}_{\text{Monday}} - \text{IHSI}_{\text{Friday}}}{\text{IHSI}_{\text{Friday}}} \]

3.4.2.3 Weekend Effect

In some capital markets there is a tendency the lowest return occurs on Monday and the return increases on other days. This is because there is a pattern of daily trading activity conducted by individual investors. To calculate the return on the weekend that is (Sulistianingsih, 2016):

\[ R_{\text{Monday}} = \frac{C_{\text{Monday}} - C_{\text{Friday}}}{C_{\text{Friday}}} \]

4 RESEARCH RESULTS AND DISCUSSION

4.1 Research Results

4.1.1 Hypothesis Testing Result

The output of hypothesis testing of research data by using SPSS can be seen on Table 1 as follows:

<table>
<thead>
<tr>
<th>Coefficients*</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.001</td>
<td>.001</td>
<td>1,391</td>
<td>.172</td>
</tr>
<tr>
<td></td>
<td>MONDAY</td>
<td>.372</td>
<td>.177</td>
<td>.302</td>
<td>2,094</td>
</tr>
<tr>
<td></td>
<td>TUESDAY</td>
<td>-.005</td>
<td>.075</td>
<td>-.010</td>
<td>-.061</td>
</tr>
<tr>
<td></td>
<td>WEDNESDAY</td>
<td>.026</td>
<td>.110</td>
<td>.039</td>
<td>.241</td>
</tr>
<tr>
<td></td>
<td>THURSDAY</td>
<td>.195</td>
<td>.100</td>
<td>.308</td>
<td>1,953</td>
</tr>
<tr>
<td></td>
<td>FRIDAY</td>
<td>-.009</td>
<td>.006</td>
<td>-.200</td>
<td>-1,366</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA*</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>.000</td>
<td>5</td>
<td>.000</td>
<td>2.382</td>
<td>.056*</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>.001</td>
<td>39</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.001</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a. Dependent Variable: STOCK RETURN
Source: Output of SPSS 23.0 (2018)

The results of t-test and f-test on the table above shows that the result of calculations with an error rate (α) = 0.05; it is obtained the calculated f value is 2.382, and sig f is 0.056. The F test indicated that since sig f is higher than 5 %, hence, overall, variables of Monday, Tuesday, Wednesday, Thursday and Friday have not a simultaneously significant influence on stock return.

Additionally, from the table above also shows that the results of T statistical test which is using error rates α = 0.05 and degree of freedom (n - k), where n = 225 and k = 5, it is obtained the t table value is 1.971. It is therefore obtained the partial hypothesis testing as follows:

1). The value of t arithmetic Monday’s variable is 2.094 (t count > t table). Since the value of t count of the Monday’s variable is >the value t table or sig t <5%, hence the Monday’s variable has a partially significant effect on stock returns.

2). The value of t arithmetic Tuesday’s variable is -0.061 (t count < t table). Because the value of t count for Tuesday's variable is < than the value of t table, it is therefore the Tuesday’s variable does not have a partially significant effect on stock returns.

3). The value of t arithmetic Wednesday’s variable is 0.241 (t count < t table). Due its value of t arithmetic Wednesday’s variable is < than the value of t table or sig t < 5%, so that Wednesday’s
variable also does not have a partially significant influence on the stock returns.

4). The value of \( t \) arithmetic Thursday’s variable is 1.953 (\( t \) count \( < t \) table). Because the value of \( t \) arithmetic Thursday’s variable is \( < \) the value of \( t \) table or \( \sigma_g t < 5\% \), as the result, Thursday’s variable does not have a partially significant effect on the stock returns as well.

5). The value of \( t \) arithmetic Friday’s variable also has a same result which is -1.366 (\( t \) count \( < t \) table). Because Friday’s variable calculation value is or \( \sigma_g t < t \) table value, or \( \sigma_g t < 5\% \), Hence, Friday’s variable also does not have a partially significant effect on stock returns.

From the result of calculations above, it indicated that partially only on Monday that has an significant effect on stock returns. Tuesday, Wednesday, Thursday, and Friday each have no significant effect on stock returns. Based on data analysis on daily stock returns during the study period, the average stock return on Monday is the highest which is \(-0.0008122\). This is because on that day most of the stock prices increased, so the stock returns also increase. Therefore, on Monday there are no deviant data, so the regression results for Monday have a significant effect on stock returns.

On other trading days (Tuesday, Wednesday, Thursday and Friday), the min value is less than the standard deviation. This means that there are deviant data, so the regression results are not significant. The highest stock return occurred on Friday, which is 0.0242646 and the lowest occurred on Thursday, which amounted to -0.0000513, hence this data range shows quite big gap.

### 4.2 DISCUSSION

#### 4.2.1 Differences of Stock Return on Day of the Week

The \( t \) table value at 95 percent confidence level and degree of freedom (\( dk = 124 \)) equal to 1,680. So the value of \( t \) counts \( > t \) table (1,415> 1,680). This means there is no significant difference between daily stock returns on trading days within a week on the Indonesia Stock Exchange. Thus, the first hypothesis which states that there is a difference in stock returns on Monday to Friday on the Indonesia Stock Exchange, is not accepted. This research is in line with (Werasuti, 2012), (Tansar, 2016), and (Rita M. R., 2009) which found that there was no significant difference between the daily stock returns of companies included in LQ 45 on trading days within a week on the Indonesia Stock Exchange.

#### 4.2.2 Monday Effect on Stock Trading in Indonesia Stock Exchange

Based on the results of descriptive statistical analysis shows that average stock return on Monday (-0.0029512) \( < \) average stock return Friday (0.0242646). This indicates that stock returns on Monday are negative or there is a decline in stock prices on Monday, with an average is 0.29 percent. Negative return at the beginning of the week resulted in Monday effect, which mean the return on the beginning of the week (Monday) tend to be negative compared to return on other trading day. The discovery of Monday effect phenomenon is in line with (Werasuti, 2012) and (Islam and Sultana, 2015) research which found that where the lowest return occurred on Monday (Monday effect). Thus the second hypothesis which states Monday effect on stock trading in Indonesia Stock Exchange received.

#### 4.2.3 Weekend Effect on Stock Trading in Indonesia Stock Exchange

Based on the results of descriptive statistical analysis shows that the average stock return Friday is positive value of 0.0242646 larger than Monday which is -0.0029512. This shows Friday’s stock return increased by an average of 0.02 percent. And the highest average is Friday compared to other trading days. Therefore, the third hypothesis which states a weekend effect on stock trading on the Indonesia Stock Exchange is accepted. Thus it is in line with the research conducted by (Lestari, 2011) and (Kurniawan, 2012) that found that where the highest return occurs on Friday (weekend effect).

#### 4.2.4 The effect of Trading Day on Daily Stock Return in Indonesia Stock Exchange

Based on the results of multiple linear regression analysis using dummy variables, the results of research for \( t \) test analysis showed that the day of trading Monday partially have a significant effect on daily stock returns of companies that entered in LQ 45 in Indonesia Stock Exchange. Based on the results of F test analysis can be concluded that there is the effect of trading days as a whole (simultaneous) to daily stock returns of companies that entered in LQ 45 in Indonesia Stock Exchange. The results of this study consistent with the research conducted by (Wulandari and Diana, 2018) and (Kurniawan, 2012) that is the influence of trading
days as a whole (simultaneous) to the company's daily stock return on the Indonesia Stock Exchange.

5 CONCLUSIONS

The conclusions of the research are 1). The simultaneous test indicated that research variables have no a simultaneously significant influence on stock return. Similarly, tested partially, it is only the occurrence Monday has a significant effect on daily stock returns in Indonesia Stock Exchange; 2). There is no significant difference between stock return on trading days in a week in Indonesia Stock Exchange in February 2017 until January 2018. 3). A Monday effect on stock trading on the Indonesia Stock Exchange results in a negative stock return at the beginning of the week for the period of February 2017 up to January 2018; 4) A weekend effects occur on stock trading on the Indonesia Stock Exchange which results in the highest positive stock returns on weekends for the period February 2017 to January 2018

Despite its important finding, this research is not without limitations. It has provided an adequate argument about the factors that cause the day of the week effect phenomenon in the LQ 45 index, but it is still unable to explain whether the behavior of individual investors or the behavior of institutional investors has the biggest role as the cause of the phenomenon, and has not given any argument about any information that gives positive sentiment and negative sentiment towards the movement of LQ 45 index which can bring up the Monday effect phenomenon which can not be proven in this research.

To the best of our knowledge, the paper is the first focusing on research framework investigating the cause and effect relationship between the occurrence of day of the week, monday, and weekend and Seasonal Anomaly in Stock Return in the context of Companies listed on LQ45 of Indonesian Stock Exchange.

In general, the outcome of research will enhance the literature on financial management and stock market; and in particular it will provide empirical evidence regarding the behavior and pattern of seasonal anomaly on stock return.

The future studies are expected to provide arguments for the emergence of the phenomenon of day of the week effect in the Indonesia capital market, not merely revealed the existence of the phenomenon but it can also reveal the role of individual investors and institutional investors as well as important information as causative factors the emergence of such phenomena. The sample chosen in this study which only uses the LQ 45 index has not been able to comprehensively reflect the condition of the Indonesian stock exchange. The period used is also relatively short at only one year, starting in February 2015 until January 2016, so it can not influence the variation observed between time. Therefore, for the purpose of proving the consistency of Monday effects existence comprehensively, further studies can use the entire population of the issuer, and the use of longer periods is recommended for further research.

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