THE DAY OF THE WEEK EFFECT IN THE COMPANIES WITHIN THE LQ45 STOCK INDEX FROM 2008-2016

Katherina Jessica Clorinda

A. Jatmiko Wibowo

International Business Management Program, Faculty of Economics, Atma Jaya Yogyakarta University, Jalan Babarsari 43-44, Yogyakarta

ABSTRACT

The purpose of this research is to investigate the existence of the day of the week effect in the company within the LQ45 stock Index from 2008-2016. Day of the week effect is a calendar anomaly that happen when stock has a different return every day. Day of the week is usually used as one of investor strategy to get an abnormal return. In this research, the data used is the daily adjusted stock price, which is secondary data of the LQ45 company stock index member used as a sample. The data will then be processed to be a daily percentage return of the LQ45 company stock index. The method of analyzing the data is using OLS Method and GARCH (1,1) Model, but before utilizing OLS Method and GARCH (1,1) Model, some test are required like the stationary test using the Augmented Dickey-Fuller and the heteroscedasticity test using the ARCH-LM.

The result shown that there is volatility within the company in the LQ45 stock index, which result in the return of the company differ for each day, which lead to the conclusion of the existence of day of the week effect within the company in the LQ45 stock index.

Keywords: the day of the week effect, calendar anomaly, capital market, Efficient Market Hypothesis, LQ45, stock return, OLS Method, GARCH

INTRODUCTION

Financial market is a market where an individual, group or even corporation that can do a buy-or-sell transaction in term of financial securities (Ross, Westerfield, & Jordan, 2006). The form of financial securities itself can be in the form of stock or bond. Financial market itself can be divided into two types of market, Capital Market and Money Market. Capital Market deal securities transaction in term of long-term securities transaction, while Money Market deal on the short-term securities transaction.

Investing in financial market mean doing an act or activity of buying securities in the financial market in the hope that in the future it will generate profit or appreciated. And the person that do this kind of activity is called as investor. There are two kind of investor the risk seeker or the risk avoider.

Capital market can be describe as market that deals of buying and selling transaction of equity and debt instrument at a long-term period of time, it include those of primary market where stock and bonds are issued, and secondary market a place where investor can trade existing securities. In a country, capital market is very important not only provide a buying and selling medium for the securities investor, but it also has a function for the country financial and economy.

Capital market can be seen as a medium where the two party, the buyer and seller, can have a transaction that could benefit both party. Where the buyer can lend some capital to the seller in the hope that their investment will be appreciated in the future, without any worry of managing the company. As for the seller, they can borrow some capital from the investor to fund some of their company or organization activity.

Efficiency in the context of capital market has been defined in many ways, but the most common way has been defined in terms of what sort of information is available to market participants, and how they handle that information. From this view, according to Dimson and Mussavian (1998) in Gharaibeh and Al Azmi (2015), an efficient capital market is one where prices of financial assets accurately reflect all information and quickly adjust to new information, which is referred to as informational efficiency. So in some way, to gain more return from the investment the investor will try to gain an upper hand from the market by trying to make it become inefficient or finding a suitable strategy in defeating the market. The study of market efficiency is quite crucial for investors, investment manager, and policy makers, by understanding the market efficie

In capital market sometimes there is a situation where some kind of seasonal anomaly occur in the market, where there is actually a seasonal pattern that occur in the capital market. One of the most discussed anomaly is the day of the week

effect, where there is a difference in the average daily return of the market for all days of the weeks.

According to Jaffe and Westerfield (1985), Wong et al. (1992), and Agrawal and Tandon (1994) in Patel and Mallikarjun (2014), day of the week effect is a global phenomenon, and this might be the result of spillover effect of developed stock market. This anomaly can be used by the investor as one of their strategy to gain more return from their investment, if the day of the week effect is prominent in the stock market investor can use such opportunities or clues regarding their investment decisions. Another strategy to use the day of the week effect is where the investor can time their investment to where they can buy and sell their securities where it would gain them additional return.

PROBLEM STATEMENT

The main problem of this study is "Is there a Day of the Week Effect in the stock return of Indonesia LQ-45 company stock Index?"

OBJECTIVE OF THE RESEARCH

The objective of this research is to analyze the day of the week effect on the stock return of LQ-45 stock market index member.

THEORITICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT Capital Market

One of the widely quoted definitions of the capital market is given by Nwankwo (1998) in Mary *et al.* (2012), who says that the capital market comprises the complex of institution and mechanism through which intermediate term funds and long term funds are pooled and made available to business, government, and individual. According to Herbert (2004) quoted in Mary *et al.* (2012), the instrument in capital market is the types of the securities that are traded in capital market. There are 3 types of it, ordinary shares, preference shares and debt instrument.

Return

According to Ross *et* al. (2006), when investor but an asset of any sort, their gain or loss from that investment is called the return of investment. In investing something the investor will seek some profitable compensation of their investment, it could be either in the form of cash directly (income component) or the change of value of their assets (capital gain or loss). And in calculating the return of one investment, the investor usually use the term of dollar return and percentage return. But usually investor prefer to summarize their return in the percentage return, because the return will not depend on how much the investor actually invest.

Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) asserts that well-organized capital markets are efficient markets, it argue that although inefficiencies may exist, they

are relatively small and not common (Ross, Westerfield, & Jordan, 2006). In here, it can be assume that in EMH the Net Present Value (NPV) investment in market is zero. The reason is because all of the price of the securities in the market reflect the available information the price of the securities is just right, not too low and not too high. The investor and the corporation will get the exact price for their securities and investment. Which mean that the investor will not have to worry whether their investment is in a "fair" price or not, this also goes for the corporation.

According to Ross *et al.* (2006), depending on the degree of efficiency, there are three form of EMH:

1. Weak form Efficient

According to Reilly and Brown (2006) in Mazviona and Ndlovu (2015), weak form market efficiency assumes that current stock prices fully reflect all security market information including the historical sequence of prices, rates of return, trading volume data, and other market generated information such as odd lot locations, block trades and transactions by exchange specialist.

2. Semi-strong form Efficient

The semi-strong form EMH asserts that security prices adjust rapidly to the release of all public information, that is current security prices fully reflect all public information, which includes, in addition to past prices, fundamental data on the firm's product line, quality of management, balance sheet composition, patents, accounting practices and earnings forecasts (Mazviona & Ndlovu, 2015).

3. Strong form Efficient

According to Chikoko and Muparuri (2013) in Mazviona and Ndlovu (2015), the strong form EMH contends that stock prices fully reflect all information from public and private sources and this means that no group of investors has monopolistic access to information relevant to the information of prices.

Calendar Anomaly

Anomalies refers to any deviation from efficient market hypothesis, while calendar anomalies refer to the existence of any irregularities, fluctuations, or the specific pattern, occurring in a recurring manner during a definite time within a year (Khan, Khan, & Khan, 2014). Calendar anomalies are not only important for traders to get abnormal returns but also for the test of efficient markets (Basdas, 2011). Because when the price become predictable because of a certain pattern that exist, it will become easier for the investor to take advantages of it and gaining more profitable return. So in other word, Calendar anomalies comprise one widely studied set of pricing anomalies (Philpot & Peterson, 2011).

Below are some of the seasonal anomaly that can be found in the market:

1. Day of the Week Effect

The day of the week effect, also referred to as weekend effect or Monday effect is an important area of study and many researchers tried to find observable patterns by testing equality of returns across all days of the week (Mazviona & Ndlovu, 2015). The day of the week effect is the phenomenon where stock returns and volatilities behave differently on different days of the week (Plimsoll, Saban, Spheris, & Rajaratnam, 2013).

2. January Effect

According to Floros (2008), Moller and Zilca (2008), Lynch *et al.* (2014), the January effect is a calendar anomaly reported in the financial markets wherein the returns in the month of January are higher that the returns during any other month of the year (Kumar & Pathak, 2016).

3. Turn of the Month Effect

Turn of the month effect is where an average returns on securities are higher on last and first three days of a month due to the investors behavior (Khan, Khan, & Khan, 2014).

4. Turn of the Year Effect

Turn of the year effect is when small capitalization stocks tend to heavily outperform large capitalization stocks on the last trading day of December and the first five trading days in January (Szakmary & Kiefer, 2004).

5. The Month of the Year Effect

The Month of the Year Effect is when stock return on a particular month are higher than the other month, and one of the example of this is January Effect and November Effect (Minimol, Makesh, & Radhika, 2013).

6. Time of the Month Effect

According to Chandra (2009), the time of the month effect is when the returns of stock are different at some points in time during a month (Khan, Khan, & Khan, 2014).

7. Trading Month Effect

The trading month effect is the tendency for statistically increased returns in each month's first fortnight in comparison to the second (Vasileiou & Samitas, 2015).

Previous Research

Many research regarding the day of the week effect in the world has been done with mixed result. In determining the day of the week effect, previous research done by French (1980), Junkus (1986), Ma (1986), Yakob (2005), and Brahmana *et al.* (2012) use two types of hypothesis in determining the existence of day of the week effect. They are the calendar time hypothesis and the trading time hypothesis.

Calendar time hypothesis stated that the process operates continuously and the expected return for Monday is three times the expected return for other days of the week, while the trading time hypothesis stated that returns are generated only during active trading and the expected returns is the same for each day of the week (French, 1980). This research will use the trading time hypothesis which is popularly used by other researchers. Because it eliminates the Monday Dummy to avoid the dummy trap because there are more than three dummies in the variables (Brahmana, Hooy, & Ahmad, 2012).

Based on th previous research then the alternative hypothesis that will be used in this research is:

Ha: The expected return is not the same of each day, which conclude there is a day of the week

effect.

RESEARCH METHODOLOGY

Population, Sample and Research Data

The population of this research would be the member of LQ45 stock index from 2008-2016. And the sample that will be used in here will be the daily stock return of the 38 companies that has been a member of LQ45 stock index for 6 semester or more (The companies listed as sample will be stated in the Appendix 1). The daily stock return will be calculated using the daily-adjusted close price of the stock. And the share price that is reported on public holiday and mass leave of Indonesia will be excluded from the data set.

Data Collection Method

This research will use secondary data of the LQ45 stock index member that is used as a sample. The gathering and collecting of the data will be done by downloading the data from the website of Yahoo Finance (finance.yahoo.com) and Google Finance (google.com/finance). Data that can be obtain from the website include that of the day of the trading. The data that is use in the research is the daily percentage return of a share. To find the data, the adjusted stock price data of a company that is obtain from Yahoo Finance and Google Finance and must be calculated using a formula of natural logarithm of current adjusted closing price of the share divided by the closing share price of the share.

Data Analysis Method

The analysis method that will be used in this research of the presence day of the week effect on LQ45 company stock index is GARCH (1,1) model. This model is used based on research done by (Kamath and Liu, 2011) and (Patel and Mallikarjun, 2014) to investigate the presence of day of the week effect. The first step is to calculate daily percentage return which can be obtain by using the formula of (Plimsoll, Saban, Spheris, & Rajaratnam, 2013):

$$r_t = \ln\left(\frac{P_t}{P_{t-1}}\right)$$

And in this research the firm will also be divided into three types of portfolio, the winner, average and loser. And in processing the portfolio, the portfolio expected return must be calculated using:

$$E(R_n) = x_1 \times E(R_1) + x_2 \times E(R_2) + \dots + x_i \times E(R_n)$$

After that there are other step of data analysis that must be done, they are:

1. Descriptive Statistic Analysis

The component of the descriptive statistic will be mean, median, maximum value, minimum value, standard deviation, skewness, kurtosis, JB Statistics, and Prob.

2. Stationary Test

In using the GARCH (1,1) model there are some requirement for the data that is the data time series pattern has to be stationary. An alternative test of stationary that has recently become popular is known as the unit root test (Gujarati, 1995). In determining the unit root test, this study will use the Augmented Dickey-Fuller (ADF) test.

3. ARCH-LM Test

According to Engle (1995) in Widarjono (2013), ARCH-LM test or Lagrange Multiplier (LM) test is a test that was developed to detect heteroscedasticity in a time series data. To use the GARCH (1,1) model in determining day of the week effect it is important for the data to have heteroscedasticity.

4. OLS Method Test

The OLS Method formula that is used in this method is: (Gharaibeh & Hammadi, 2013)

$$R_t = b_1 + b_2 D_{2t} + b_3 D_{3t} + b_4 D_{4t} + b_5 D_{5t} + \varepsilon_t$$

5. GARCH (1,1) Model Test

The GARCH (1,1) model that has been adapt to suit this research is: (Patel & Mallikarjun, 2014)

$$\begin{split} R_t &= \alpha_1 + \alpha_2 D_{2t} + \alpha_3 D_{3t} + \alpha_4 D_{4t} + \alpha_5 D_{5t} + \sum_{t=1}^m \alpha_i \, R_{t-1} + \varepsilon_t \\ & \varepsilon_t | \phi_{t-1} \sim iid \, N \, (0, h_t) \\ h_t^2 &= \gamma_0 + \delta_1 \varepsilon_{t-1}^2 + \gamma_1 h_{t-1} \end{split}$$

RESULT AND DISCUSSION

Descriptive Statistic

 $\begin{array}{c} \textbf{Tabel 2} \\ \textbf{Descriptive Statistic of Daily Stock Return of the 38 Companies} \\ \textbf{From 2008} - 2016 \end{array}$

Firm	Obs.	Mean	Std. Dev.	Skew.	Kurtosis	Jarque-Bera	Prob.
AALI	2177	-0.0001	0.0290	-0.0126	11.3327	6298.3480	0.0000
ADHI	2177	0.0003	0.0325	0.4197	8.5812	2889.4060	0.0000
AKRA	2177	0.0007	0.0264	0.0094	7.1598	1569.6590	0.0000
ANTM	1 2177	-0.0007	0.0316	0.4342	14.2156	11478.4600	0.0000
ASII	2177	0.0010	0.0278	0.5693	11.6886	6965.3000	0.0000
ASRI	2177	0.0003	0.0316	0.2686	8.0787	2365.8440	0.0000
BBCA	2177	0.0007	0.0213	-0.0063	6.9018	1380.9280	0.0000
BBNI	2177	0.0005	0.0265	-0.2180	16.2174	15864.0600	0.0000
BBRI	2177	0.0006	0.0269	0.3177	7.2834	1700.9240	0.0000
BDMN	N 2177	-0.0003	0.0299	0.3625	16.2864	16060.3800	0.0000
BMRI	2177	0.0006	0.0257	0.3759	8.6567	2953.8340	0.0000
BMTR	2177	-0.0003	0.0343	1.1408	10.8321	6036.5120	0.0000
CPIN	2177	0.0012	0.0317	0.2186	7.3112	1703.2680	0.0000
CTRA	2177	0.0005	0.0337	0.3657	6.0207	876.2249	0.0000
EXCL	2177	0.0000	0.0412	0.6009	16.4052	16431.1700	0.0000
GGRM	1 2177	0.0009	0.0265	0.8716	10.7742	5757.8860	0.0000
INCO	2177	-0.0016	0.0600	-25.2960	969.8402	85024508.0000	0.0000
INDF	2177	0.0006	0.0249	-0.1114	7.8409	2130.1660	0.0000
INTP	2177	0.0003	0.0295	0.3330	42.7018	143017.6000	0.0000
ISAT	2177	-0.0001	0.0249	-0.0431	15.0604	13194.5200	0.0000
ITMG	2177	0.0000	0.0321	0.1949	9.6861	4068.7550	0.0000
JSMR	2177	0.0004	0.0214	0.2433	11.5957	6723.5950	0.0000
KLBF	2177	0.0008	0.0249	0.7727	11.9228	7438.5450	0.0000
LPKR	2177	0.0000	0.0237	-0.0006	9.6085	3961.4820	0.0000
LSIP	2177	-0.0001	0.0312	-0.1569	10.8376	5580.9990	0.0000
MEDO	2177	-0.0006	0.0305	0.5657	9.7603	4261.5790	0.0000
MNCN	N 2177	0.0003	0.0342	1.1197	10.0775	4998.5980	0.0000

PGAS	2177	0.0001	0.0279	0.1734	10.9993	5815.2820	0.0000
PTBA	2177	0.0001	0.0315	-0.3246	14.3332	11688.8500	0.0000
PWON	2177	0.0007	0.0534	0.9954	30.0329	66647.2200	0.0000
SMCB	2177	-0.0003	0.0284	-0.2037	12.4491	8114.0690	0.0000
SMGR	2177	0.0002	0.0253	-0.7968	21.4015	30945.5700	0.0000
SMRA	2177	0.0007	0.0337	0.3691	8.1727	2476.5260	0.0000
TINS	2177	-0.0003	0.0322	-0.3352	13.8561	10731.1000	0.0000
TLKM	2177	0.0007	0.0217	0.9173	13.5456	10392.8900	0.0000
UNTR	2177	0.0004	0.0311	0.3616	14.7673	12607.7400	0.0000
UNVR	2177	0.0008	0.0252	-0.2301	96.2471	788729.2000	0.0000
WIKA	2177	0.0007	0.0298	-0.0211	12.6164	8388.4360	0.0000

Source: Output result of daily return of the companies sample using Eviews 8.0

Tabel 21
Descriptive Statistic of Daily Stock Return of Portfolio
From 2008 – 2016

Portfolio	Obs.	Mean
WINNER	2177	0.0007
AVERAGE	2177	0.0004
LOSER	2177	-0.0003

Source: Output result of daily return of the companies sample using Eviews 8.0

Stationary Test

By using Augmented Dickey-Fuller (ADF) test to find the stationary of the data, the researcher can compare the ADF t-statistic with t-statistic critical value, if ADF t-statistic is more than the t-statistic critical value then the data is stationary. The result of the ADF test shows that all of the 38 companies' data and the three portfolio is stationary.

ARCH-LM Test

Before commencing GARCH (1,1) model test, another test must be done, it is the ARCH-LM test that is used to determine the residual characteristic, whether it is heteroscedastic or not. If the residual has a heteroscedasticity, then the data contains an ARCH element which mean the research can be proceed using the GARCH (1,1) model, if not then the research can be done using OLS method. Based on the ARCH-LM test that has been done by the researcher, almost all of the 38 companies and the three portfolios, except INCO, has a residual that is heteroscedastic, which mean it contains an ARCH element. So, the data processing can be proceed using the GARCH (1,1) model, except for INCO which use the OLS Method.

GARCH (1,1) Model Test, OLS Method Test and Discussion

1. Testing H1: there is a day of the week effect in the 38 companies within the LQ45 index

GARCH (1,1) Model Result in all the 37 companies and three portfolios show a consistent probability value from Monday to Friday, with the value of 0.0000 for ARCH(1) and 0.0000 for GARCH(1) that is less than α (0.05). The probability value shown that the return of the companies and the portfolios within the research sample significantly contain an ARCH and GARCH elements that shown the existence of volatility within it. The volatility in the company's stock return can be the result of many factors. From some of those factors the day of the week phenomenon is one of them is the day of the week effect. If the result of the return of the company is the same (=) for each day in a week then it means, there is no volatility in the company stock that could lead to a phenomenon called day of the week effect. However, if the result of the return of the company is not the same (\neq) for each day in a week, it means that there is volatility in the company stock that could lead to a phenomenon called day of the week effect. From the result of the data analysis, it shown that there is volatility within the 37 company stock and three portfolios, in other words, the expected return of the company is not the same (\neq) for each day, which conclude that there is a day of the week effect (H1 Accepted).

As for the OLS Method result for INCO shows that the F-Statistic probability has a value of 0.2921, that is more than α (0.05). In addition, all of the coefficient probability is more than α (0.05). If the value of the F-Statistic and at least one of the variable probability is less than alpha, it is significant, which mean that the expected return of the company stock is not the same for each day and it indicates the existence of day of the week effect within the stock return. But if the value of the F-statistic and all of the variable probability is more than alpha, it is not significant, which mean that the expected return of the company stock is the same for each day and it indicate that there is no day of the week effect. Based on the criteria and the result of INCO OLS method, it indicates that the expected return of INCO stock is the same for each day. It can be conclude that there is no day of the week effect in INCO stock return (H0 Accepted).

CONCLUSION

Conclusion

- 1. Based on the data analysis conducted in chapter IV about the day of the week existence in the companies within LQ45 stock index, the result of GARCH (1,1) Model shown that the expected return of the 37 companies and the 3 portfolios using the model is not the same for each day, which concludes that there is a day of the week effect (H1 Accepted). While the result of the OLS method shown that the stock return of INCO has the same expected return for each day, which concludes that there is no day of the week effect. (H0 Accepted.)
- 2. The test result of agriculture sector stock return that consist of AALI and LSIP from 2009-2016 shows that the return of the company in the agriculture sector

- from day to day in a week is not the same, which mean **H1 Accepted** for AALI and LSIP from 2009-2016.
- 3. The test result of basic industry and chemicals sector stock return that consist of CPIN, INTP, SMCB and SMGR from 2009-2016 shows that the return of the company in the basic industry and chemicals sector from day to day in a week is not the same, which mean **H1 Accepted** for CPIN, INTP, SMCB and SMGR from 2009-2016.
- 4. The test result of consumer goods industry sector stock return that consist of GGRM, INDF, KLBF and UNVR from 2009-2016 shows that the return of the company in the consumer goods industry sector from day to day in a week is not the same, which mean **H1 Accepted** for GGRM, INDF, KLBF and UNVR from 2009-2016.
- 5. The test result of finance sector stock return that consist of BBCA, BBNI, BBRI, BDMN and BMRI from 2009-2016 shows that the return of the company in the finance sector from day to day in a week is not the same, which mean **H1 Accepted** for BBCA, BBNI, BBRI, BDMN and BMRI from 2009-2016.
- 6. The test result of infrastructure, utilities and transportation sector stock return that consist of EXCL, ISAT, JSMR, PGAS and TLKM from 2009-2016 shows that the return of the company in the infrastructure, utilities and transportation sector from day to day in a week is not the same, which mean **H1 Accepted** for EXCL, ISAT, JSMR, PGAS and TLKM from 2009-2016.
- 7. The test result of mining sector stock return that consist of ANTM, ITMG, MEDC, PTBA and TINS from 2009-2016 shows that the return of the company in the mining sector from day to day in a week is not the same, which mean **H1 Accepted** for ANTM, ITMG, MEDC, PTBA and TINS from 2009-2016.
- 8. While the test result of mining sector stock return that consist of INCO from 2009-2016 shows that the return of INCO stock is the same for each day, which mean **H0 Accepted** for INCO from 2009-2016.
- 9. The test result of miscellaneous industry sector stock return that consist of ASII from 2009-2016 shows that the return of the company in the miscellaneous industry sector from day to day in a week is not the same, which mean **H1 Accepted** for ASII from 2009-2016.
- 10. The test result of property, real estate and building construction sector stock return that consist of ADHI, ASRI, CTRA, LPKR, PWON, SMRA and WIKA from 2009-2016 shows that the return of the company in the property, real estate and building construction sector from day to day in a week is not the same, which mean H1 Accepted for ADHI, ASRI, CTRA, LPKR, PWON, SMRA and WIKA from 2009-2016.
- 11. The test result of trade, service and investment sector stock return that consist of AKRA, BMTR, MNCN and UNTR from 2009-2016 shows that the return of the company in the trade, service and investment sector from day to day in a week is not the same, which mean **H1 Accepted** for AKRA, BMTR, MNCN and UNTR from 2009-2016.
- 12. The test result of company's portfolio stock return that is divided into winner portfolio, average portfolio and loser portfolio from 2009-2016 shows that the

return of the company in the three portfolios from day to day in a week is not the same, which mean **H1 Accepted** based on the three form of portfolio from 2009-2016.

Managerial Implication

The research of day of the week effect existence in the return of companies within LQ45 stock index are expected to help the party that is involved in the stock market, such as the investor. Based on the research result, the researcher hope that the investor can use the information from this research to help them in determining the best investment by using the company trend within the LQ 45 stock index. And because of the more firm-specified level of the research, it could hopefully help the investor more in predicting the trend movement of the stock.

And based on the research result, the investor can expect and foresaw the stock price movement, using this knowledge the investor can then decide which day is the best day to start an investment. Based on the result of the research, investor should consider to buy stock from the 38 companies in the LQ45 index in Monday, where the stock price is lower than the other day of the week. And then the investor could sell the shares again at the end of the week, to gain a profit.

Research Limitation

- 1. The research are only limited to the companies within the LQ45 index that are selected as the sample, and the period of the research is only within 9 year which is from 2009-2016.
- 2. The research is done only by using OLS Method and GARCH (1,1) model, which mean there is a limitation in the analysis tools and technique. There is no new method development to compare with, by comparing many types of analysis tools and technique the researcher can determine the best model for the data and gives the best analytical result.

Suggestion for Further Research

Based in the research limitation, the writer will give suggestion for future research as followed:

- 1. The future research are suggested to add more company stock, and not only the companies included in the LQ45 stock index.
- 2. The future research are suggested to also analyze the day of the week effect based on the sector or industry.
- 3. The future research are suggested to use other analytic tools and techniques, and to compare them to determine the best analytical tools for the research within the day of the week effect.
- 4. The future research are suggested to add period of the research, so it can be analyze whether the day of the week phenomenon is a long term phenomenon or not.

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