



Testing of January Effect, the Day of the Week Effect, and Size Effect: a Study of LQ45 Stocks in Indonesia Stock Exchange

Ernie Hendrawaty[✉], Raden Ayu Fiska Huzaimah

Faculty of Economics and Business, Universitas Lampung, Lampung, Indonesia

Info Article

History Article:

Submitted 18 August 2019

Revised 14 November 2019

Accepted 2 December 2019

Keywords:

Efficient Market; Size Effect; Day
of the Week Effect; January Effect;
Stock Return.

Abstract

The purpose of this study is to examine the anomalies on the efficient capital market. However, research that combines January Effect, the day of the week Effect, and size Effect of getting a complete and clear picture of the phenomenon on the market is still limited. The variables used are stock returns, trading days, company size. This study uses linear panel regression. The January Effect hypothesis in The Indonesian Capital Market does not support, whereas the combined test conducted to differentiate the behavioral pattern of the days of the week Effect and the size Effect in January and Non-January months. The study proved the hypothesis which states that seasonal pattern dominated occurs in January trading months, while the size pattern occurs in Non-January trading months. In the future, the arguments about the emergence of the day of the week Effect phenomenon in the Indonesian capital market by revealing the role of investors and essential information as factors that cause the phenomenon to arise. Further studies should continue to use all listed stocks but use a more extended period.

Pengujian January Effect, the Day of the Week Effect, dan Size Effect: Studi pada Saham LQ 45 di Bursa Efek Indonesia

Abstrak

Tujuan dari penelitian ini adalah untuk mengkaji anomali di pasar modal yang efisien. Namun, penelitian yang menggabungkan Efek Januari, Efek hari dalam seminggu, dan Efek ukuran untuk mendapatkan gambaran yang lengkap dan jelas tentang fenomena di pasar masih terbatas. Variabel yang digunakan adalah return saham, hari perdagangan, dan ukuran perusahaan. Penelitian ini menggunakan regresi panel linear. Tes ini menunjukkan bahwa hipotesis Efek Januari tidak didukung di Pasar Modal Indonesia, sedangkan tes gabungan dilakukan untuk membedakan pola perilaku hari-hari dalam seminggu dan Efek ukuran pada bulan Januari dan Non-Januari. Studi ini membuktikan hipotesis yang menyatakan bahwa pola musiman mendominasi terjadi pada bulan perdagangan Januari tetapi pola ukuran terjadi pada bulan perdagangan non-Januari. Studi selanjutnya diharapkan dapat memberikan argumen tentang munculnya fenomena Efek hari dalam seminggu di pasar modal Indonesia dengan mengungkap peran investor dan informasi penting sebagai faktor yang menyebabkan fenomena tersebut muncul. Studi lebih lanjut harus terus menggunakan semua saham yang terdaftar tetapi menggunakan periode yang lebih panjang.

JEL Classification: G10, G12

How to Cite: Hendrawaty, E., & Huzaimah, R. A. F. (2019). Testing of January Effect, the Day of the Week Effect, and Size Effect: a Study of LQ45 Stocks in Indonesia Stock Exchange. *Jurnal Dinamika Manajemen*, 10(2), 173-184.

✉Correspondence Address

Jl. Sumantri Brojonegoro, Gedong Meneng, Rajabasa, Bandar Lampung, Lampung
Email: ernie.hendrawaty@feb.unila.ac.id

ISSN

2086-0668 (print) 2337-5434 (online)

DOI: 10.15294/jdm.v10i2.20620

INTRODUCTION

Malkiel and Fama (1970) introduced the concept of an efficient market hypothesis. Efficient markets as a market where the prices created reflect the full availability of information. Information is an essential element for investors and business people in decision making because information provides explanations and various records or a description of the past, present, or future conditions. Malkiel and Fama (1970) define three different levels of market efficiency. The three levels of market efficiency are weak market efficiency, semi-strong market efficiency, and strong market efficiency.

Market anomalies as a technique or strategy that seems to conflict with efficient markets (Fama & French, 2016). An efficient market can experience anomalies if, at any given time, there is a pattern formation and repetition or experiencing predictable changes. Anomalies cause investors to make predictions because stock price movements are patterned at certain times and are no longer random. Schwert (2003) states anomalies often seem to disappear, reverse, or attenuate. This raises the question of whether profit opportunities existed in the past, but have since been arbitrated away, or whether the anomalies were simply statistical aberrations that attracted the attention of academics and practitioners.

One of the interesting findings from the empirical work in this chapter is that many of the well-known anomalies in the finance literature do not hold up in different sample periods. In particular, the size Effect and the value Effect seem to have disappeared after the papers that highlighted them were published. At about the same time, practitioners began investment vehicles that implemented the strategies implied by the academic papers. The weekend Effect and the dividend yield Effect also seem to have lost their predictive power after the papers that made them famous were published. In these cases, however, I am not aware of any practitio-

ners who have tried to use these anomalies as a major basis of their investment strategy. The small-firm turn-of-the-year Effect became weaker in the years after it was first documented in the academic literature, although there is some evidence that it still exists. Interestingly, however, it does not seem to exist in the portfolio returns of practitioners who focus on small-capitalization firms. Likewise, the evidence that stock market returns are predictable using variables such as dividend yields or inflation is much weaker in the periods after the papers that documented these findings were published. All of these findings raise the possibility that anomalies are more apparent than real. The notoriety associated with the findings of unusual evidence tempts authors to further investigate puzzling anomalies and later to try to explain them. But even if the anomalies existed in the sample period in which they were first identified, the activities of practitioners who implement strategies to take advantage of anomalous behavior can cause the anomalies to disappear (as research findings cause the market to become more efficient explains that there are four forms of efficient market anomalies consist of company anomalies, seasonal anomalies, event anomalies, and accounting anomalies).

Anomalies that often interfere with capital market activities include calendar anomalies. Some anomalies included in calendar anomalies are the January Effect and the day of the week Effect. January Effect as a condition wherein the average of January stock return tends to be higher compared to other months (Thaler, 1987; Haug & Hirschey, 2006; Moller & Zilca 2008; Sun & Tong, 2010). The day of the week Effect as an anomaly that causes trading days to influence stock return level patterns (Condoyanni et al., 1987; Dubois & Louvet, 1996; Dicle & Levendis, 2014; Chang et al., 2006; Chiah & Zhong, 2019). The efficient market theory also states there is no difference in stock returns, while the phenomenon of the day of the week Effect is contrary to efficient market theory. On the day of the week anoma-

ly, there is a difference for each daily return for one week.

Perez (2018) has researched and analyzed the existence and issue of the January Effect in a systematic and around the world, studying the performance of 106 indexes in 86 countries and jurisdictions. It is found that some studies detect the January Effect, and some do not. Researchers tested the January Effect in the USA equity market (Mehdian & Perry, 2002); in USA equity (Haug & Hirschey, 2006); in Rumania (Balint & Gică, 2012).

Previous studies on Day of the Week Effect also show different results. There exists Day of the Week Effect (Dubois & Louvet, 1996; Muhammad & Rahman, 2010; Dicle & Levendis 2014; Zhang et al., 2017; Chiah & Zhong, 2019). On the other hand, The stock markets are more efficient today, causing the Day of the Week Effect to disappear slowly (Alagidede, 2008).

Previous empirical research examined size-related in January were (Reinganum, 1983; Keim, 1983; Rogalski & Tinic, 1986; Rathinasamy & Mantripragada, 1996; Chen & Chien, 2011). Small firms have significant returns in January. The empirical tests appear to be consistent with tax-loss selling, information hypothesis, positive expectation behavior, and cultural influence.

The problem of this research derived from the issues that the January Effect and The Days of the week Effect showed different results. Moreover, the empirical paper tests were limited and few, only from Tang and Kwok (1997), also, the January size Effect remained a question of whether it was anomalies or risk mismeasurement. Therefore, we try to address the question, do these anomalies exist today in the Indonesian stock exchange?

The study will test the January Effect, Days of the week Effect, and Size Effect and the relationship between them in the Indonesia Stock Exchange.

Hypothesis Development

Malkiel and Fama (1970) define that the security market is efficient if the security price

"fully reflect" the information available. The definition of market efficiency is the market efficient concerning some specified information system, and only if the security price act as if everyone observes the information system. The definition of market efficiency on dynamic processes is the market efficient if the spread of information is done quickly so that information becomes symmetrical that everyone has this information.

Prices formed on the market are a reflection of the information available. The condition of an efficient capital market will erode all practices. It will damage the capital market mechanism, such as falsifying the issuer's financial data and information, including trading. The analyst who analyzes the company comprehensively will be able to provide corrections and adjustments to the misinformation. Therefore no one will be able to obtain abnormal returns, after adjusting for risk, by using existing trading strategies, i.e., will not be able to obtain information to gain returns consistently above the market. Market anomalies are techniques or strategies that are opposite or contrary to the concept of efficient capital markets, and the causes of these events unexplained easily.

This research is to test the January Effect, the days of the week Effect, and size Effect. The study will compare the days of the week returns in January to days of the week returns in non-January months and will compare the return of small stocks in January and return of small stocks in non-January.

The January Effect is a condition wherein the average of January stock return tends to be higher compared to other months. It has been detected, in Japan (Li & Gong, 2015); in Jordan, Morocco (Gharaibeh, 2017); Turkey (Guler, 2013); and several countries in Western Europe (Asteriou & Kavetsos, 2006). Several hypotheses have been suggested to explain the January seasonal in stock returns. Most prominent are a tax-loss selling hypothesis and an information hypothesis (Keim, 1983; Starks et al. 2006). Besides, the January Effect is explained by a be-

havioral framework based on optimistic expectations. The turn-of-the-year is hypothesized to be a time of renewed optimism (Cicccone, 2011). January Effect may also be a phenomenon of risk compensation in the month (Seyhun, 1988). Based on this argument, the formulation hypothesis is:

H1: The return of LQ45 stocks in January is higher than the return of LQ45 stocks in Non-January

Day of the week Effect is a phenomenon formed of an anomaly from efficient capital market theory so that the average daily return is not the same on every trading day. According to the efficient market theory, stock returns will not differ based on differences in trading days.

The day of the week Effect states that there are differences in returns for each trading day in one week. At the beginning of the week, it tends to produce negative returns and at the end of the week, tends to produce a positive return. In some capital markets, there is a tendency for the lowest return to occur on Monday and then increase in other days. The existence of The Days of the Effect (Chang et al., 1993; Dubois & Louvet, 1996; Muhammad & Rahman, 2010; Zhang et al., 2017; Chiah & Zhong, 2019).

Some studies have explored the sources of the Monday Effect. The mood explains the Monday Effect. A high proportion of investors are more pessimistic in the early days of the week, and become more optimistic as the week progresses (Abu Bakar et al. 2014); Monday Effect is caused by a combination of various factors, especially the fortnight of the month, account settlement day, ex-dividend day, arrival of (bad) news on Fridays, trading activity, and bid-ask spread or those are support trading time hypothesis (Draper & Paudyal, 2002)

Based on this argument, the formulation hypothesis is:

H2: The return of LQ45 stocks on Monday and Friday is different from the stock return of LQ45 stocks on other days on the Indonesia Stock Exchange.

Previous research has shown that the day-of-the-week Effect exists in the mean return and volatility of international stock markets. Tang and Kwok (1997) study whether the same Effect exists in international portfolio diversification. The impact of the day-of-the-week Effect on international portfolio diversification is also compared between January and non-January months. The seasonal patterns are mainly contributed by non-January months. The empirical results provided new evidence on the day-of-the-week Effect of stock returns. The results also showed that the seasonal pattern on correlations between stock markets differs across January and non-January months. The degree of risk reduction is smallest on Thursday and Monday in January and non-January months, respectively. Fifty percent of the January premium is attributable to significant abnormal returns during the first week of trading in the year, particularly on the first trading day (Keim, 1983). Based on this argument, the formulation hypothesis is:

H3: The return of LQ45 stocks on Monday and Friday in January is different from the return of LQ45 stocks on Monday and Friday in Non-January months.

Next, this research is to test the January Effect and size Effect and to test whether The Indonesian capital market shows the January size Effect. Some previous studies concluded that the larger the size of the company, the smaller the return obtained, and vice versa, the smaller the size of the company, the investor will get a higher return. It is the consistency of returns obtained by large companies that tend to be stable, while small companies often experience stock return fluctuations by capital market conditions. Predictions after national holidays will have an impact on investor decisions, especially on small company stocks. Review 30 years of research on the size Effect in equity returns (Banz, 1981, Brown et al., 1983, van Dijk, 2011). Stocks with a low market capitalization value or have a small-firm size can produce higher returns than

stocks with larger firm size (Since Fama & French, 1992; Mazviona & Nyangara, 2014). The phenomenon of stock return deviations based on company size is called the size Effect. The size Effect is one type of company anomaly, which defines as returns on small companies tend to be more significant even though it has adjusted for the risk (Kim & Park, 1994). Large investors do not feel worried before the national holiday so that stock returns remain stable. If the closing price of two days before the holiday tends to increase, then the trading pattern will be significant for small company stocks because small-companies have a relatively larger bid-ask spread (Kim & Park, 1994). The Effects of special holidays on the New Zealand capital market were stronger in stocks with small sizes compared to stocks of medium or large size (Cao et al., 2009). Based on this argument, the formulation hypothesis is:

H4: The return of small-company LQ45 stocks is higher than the return of large-company LQ45 stocks on the Indonesia Stock Exchange.

Keim (1983) found that daily abnormal return distributions in January have significant means relative to the remaining eleven months. The relationship between abnormal returns and size is always negative and more pronounced in January than in any other month. Chou et al. (2011) test whether the value premiums observed among large and small stocks are different in January and non-January months. Empirical evidence supports the fact that the value premium has different patterns in January and non-January months for large and small-capitalization firms. The large stocks have a significant value premium only in January, and loser stocks mainly drive this January value premium among large stocks at the turn of the year.

In contrast with extensive stocks, the value premium of small stocks occurs only in non-January months. Chen and Chien (2011) explain the size Effect in January with the uti-

lization of some theoretical arguments drawn from behavioral finance, such as mental accounting and house money, in a Chinese culture-oriented emerging stock market. Under Chinese tradition, employees are rewarded with a generous bonus before Lunar New Year, most often paid in January. This gain, analogous to the concept of house money, enhances the propensity to bear increased levels of risk, which in turn stimulates the demand for higher risk securities, particularly in a market that is mainly dominated by individual investors, as in Taiwan. The empirical results are consistent with the culture bonus hypothesis. Only small firms with a higher risk in the Taiwanese stock market exhibit the apparent size Effect in January. Especially for the years when the bonus payments were in January and when the whole market had positive performance growth in the preceding year. Based on this argument, the formulation hypothesis is:

H5: The return of small-company LQ45 stocks in January is higher than the return of small-company LQ45 stocks in Non-January months.

METHOD

The data used in this study is the closing price of the LQ45 stocks listed on the Indonesia Stock Exchange and market capitalization of LQ45 stocks. Data to be tabulated are daily and monthly data. The daily data meant is the trading day data for one week. If there are Saturday and Sunday holidays, it excludes in the daily data. The monthly data is the data of the trading month for one year.

The type of data used is time series data and cross-section data. The time-series data used is daily stock price data from time to time, while the cross-section data is sample data of companies that list in the Indonesia Stock Exchange.

The population in this study are LQ45 stocks listed on the Indonesia Stock Exchange. The number of companies listed is 45 companies from nine industry sectors, which classify using JASICA.

The data collection method used in this study is the documentation method. The data used are secondary data related to daily stock closing price data in sample companies from January to December. The data is from www.idx.co.id and www.finance.yahoo.com.

The dependent variable in this study is stock returns. The stock return is the actual return, which is the difference in the closing price of the current period (t) with the closing price of the stock in the previous period ($t-1$), then divided by the closing price of the previous period ($t-1$)

The independent variable in this study uses a dummy variable. In this study, the dummy variable is the January Effect, the Day of the Week Effect, and the Size Effect. The Dummy January is $DJAN = 1$ if the trading month in January. $DJAN = 0$ if not. The Dummy Day of the Week Effect in this study is $DMON = 1$ if the trading day is on Monday in January, $DMON = 0$, if not. $DFRI = 1$ if the trading day is on Friday in January; $DFRI = 0$, if not. $DTUE = 1$ if the trading day is on Tuesday in January; $DTUE = 0$, if not. $DWED = 1$ if the trading day is on Wednesday of in January; $DWED = 0$, if not.

The variable size of the company uses market capitalization value. Market Capitalization ($MARKCAP$) is Market Capitalization Value (number of outstanding shares \times closing price). In this study, the size of the company uses the natural log value of the market capitalization value, $LNSIZE = \text{Natural Log Market Capitalization Value}$. $DSIZE = 1$ if small companies, $DSIZE = 0$ if not.

The data analysis technique in this study was carried out using linear regression analysis for the trading days of the day of the week Effect in January and size Effects with dummy variables. This study uses panel data because it is a composite data from cross-section data and time-series data. Regression with panel data is required to choose many appropriate approach models to estimate panel data.

RESULT AND DISCUSSION

It contains the results of empirical or theoretical study written by systematic, critical analysis, and informative. The use of tables, images support, or clarify the discussion and are confined to support substantial information, e.g., tables of statistical tests, the results of model testing. Discussion of results should be argumentative regarding the relevance of the results, theory, previous research, and empirical facts, as well as demonstrate the novelty of the findings.

Descriptive Statistics

Table 1 describes the descriptive statistics of all variables used in the study. The table determines the characteristics of variable stock returns, trading months variables, trading days variables, and firm size variables. Table 1 present the character of the variables of this research. On average, the return in January is positive and very low. While some return in Non-January shows a negative return. Regarding the return of small size firms, the table shows that in an average return of small firms are -0.00 , while the return of large firms is 0.00 .

While Table 2 presents the results of testing the influence of trading month in January and Non-January on Return. Model 1 shows that there are no differences in return on trade days in January and Non-January, as indicated by the t -statistic and p -value. Model 2 presents the model that breakdown the trading month's return by monthly based. There is the return of January, February, March, April, May, June, July, August, October and, December with September return as reference trading month.

The return on January trading is higher than the return of other trading months, as indicated by the value of the $DJAN$ coefficient, which is positive ($\beta = 0.002778$). It indicates the occurrence of the January Effect in a trading month in 2017.

Table 1. Descriptive Statistics of Research Variables

Month	Mean	Median	Max	Min.	Std. Dev.	Obs.
Jan	.00	.00	.14	-.27	.02	945
Feb	-.00	.00	.25	-.72	.03	855
Mar	.00	.00	.24	-.15	.02	990
Apr	-.00	.00	.23	-.90	.03	765
May	-.00	.00	.14	-.13	.02	900
Jun	-.00	.00	.09	-.11	.01	675
Jul	.00	.00	.11	-.07	.01	945
Aug	-.00	.00	.09	-.09	.01	990
Sep	-.00	.00	.24	-.50	.02	855
Oct	.00	.00	.19	-.29	.02	989
Nov	-.00	.00	.12	-.80	.03	955
Dec	.00	.00	.35	-.80	.03	846
All	-.00	.00	.35	-.90	.02	10710
Days	Mean	Median	Max	Min.	Std. Dev.	Obs.
Monday	-.00	.00	.24	-.29	.02	2115
Teuesday	-.00	.00	.23	-.50	.02	2204
Wednesday	.00	.00	.25	-.17	.02	2206
Thursday	-.00	.00	.35	-.80	.03	2070
Friday	-.00	.00	.12	-.15	.02	2115
All	.00	.00	.35	-.80	.02	10710
FIRM SIZE	Mean	Median	Max	Min.	Std. Dev.	Obs.
Small firms	-.00	.00	.25	-.80	.03	5114
Large firms	.00	.00	.35	-.80	.02	5596
All	.00	.00	.35	-.80	.02	10710

The return on February, March, April, May, June, August, October, November and December also higher compared to the return of other trading months as indicated by the positive DFEB coefficient value ($\beta = 0.001811$); the positive DMAR coefficient value ($\beta = 0.002865$); the positive DAPR coefficient value ($\beta = 0.002734$); The positive DMAY coefficient value ($\beta = 0.001955$); the positive DJUL coefficient value ($\beta = 0.002217$); the positive DAUG coefficient value ($\beta = 0.001888$) the positive DOCT coefficient value ($\beta = 0.003860$); the positive DNOV coefficient value ($\beta = 0.003198$); the positive DDEC coefficient value ($\beta = 0.000471$).

Model 2 shows that in addition to the differences in trading month returns, there is also the influence of the firm size as the control variable. The negative LNSIZE coefficient value ($\beta = -0.016812$), which explains that the larger the size of the company, the company's return will decrease with significant value. This result indicates the size anomaly hypothesis, which states that small company returns outperform large-sized company returns. This finding will be investigated further in the next section.

Table 3 presents the results of testing the influence of trading days on stock return. The table consists of three models. The first model

is using the entire months; the second and third model is aimed to test hypothesis 3 that focuses on testing the days of the week Effect in January and non-January. The results of testing the influence of trading month in January and Non-January on Return shown in Table 2.

This phenomenon disappears when the model applies in January trading days. As shown in Table 3, model 2, the coefficient value of trading days on Monday, Tuesday, and Friday are different from the other days in the week.

Table 2. Results of Testing Hypothesis 1

Variables	Model 1			Model 2		
	Coef	t-Stat		Coef.	t-Stat	
C	-.01	-2.28	**	-.01	-2.59	***
DJAN	.00	.82		.00	2.60	***
DFEB				.00	1.64	*
DMAR				.00	2.73	***
DAPR				.00	2.38	**
DMAY				.00	1.80	*
DJUN				.00	1.48	
DJUL				.00	2.08	**
DAUG				.00	1.79	*
DOCT				.00	3.68	***
DNOV				.00	2.84	***
DDEC				.00	2.29	**
LNSIZE	.00	2.28	**	-.01	-2.59	***
N Observation	10710			10710		

Based on the regression model apply in all months, there is no difference between return on trading days in Monday and Friday and return other days of the week except for the return of Wednesday (DWED) show positive coefficient value ($\beta = 0.002034$) which means that trading day on Wednesday perform better return than the other days in the week.

The return on Monday (DMON), return on Tuesday (DTUE) and return on Friday (DFRI) show negative coefficient value ($\beta = -0.00849$), ($\beta = -0.00433$) and ($\beta = -0.00756$) respectively. Moreover, the Effect of firm size (LNSIZE) on return dismiss in the second model. The results showed that the seasonal pattern differs across January and non-January months. The day of the week Effect

Table 3 Results of Testing Hypothesis 2 and Hypothesis 3

Variable	All Months			January			Non-January		
	Coef	t-Stat		Coef	t-Stat		Coef	t-Stat	
C	-.01	-2.32	**	.02	1.35		-.01	-2.67	***
DMON	4.84E-06	.00		-.00	-4.03	***	.00	.91	
DTUE	-.00	-.47		-.00	-2.17	**	-2.65E-05	-.03	
DWED	.00	2.49	**	.00	.79		.00	2.41	**
DFRI	.00	.22		-.00	-3.59	**	.00	1.04	
LNSIZE	.00	2.28	**	-.00	-1.09		.00	2.57	**
Obs	10710			945			9765		

patterns is mainly contributed by the January trading month even though the sign of pattern is different. In this study, the negative sign of return on Monday continues the next day until the trading day on Friday. It indicated that in early of the year, the investor was still pessimists. In Non-January trading months, the seasonal pattern found only on Wednesday (DWED) with positive coefficient value ($\beta = 0.00209$). It means that trading on Wednesday performs better returns than the other days during Non-January trading months.

Table 4 presents the results of testing whether the value premium has different patterns in January and non-January months for large and small firms. Table 4 shows that during the entire months, the small firms' stocks have value premiums than large firms stocks. The dummy size (DSIZE) show negative coefficient value ($\beta = -0.001539$). This table also shows that the premium value of small size patterns only found in Non-January trading months. It is s indicated. by the dummy size (DSIZE) that showed a negative coefficient value ($\beta = -0.001840$). Moreover, the size Effect did not exist in January.

hypothesis based on optimistic expectations that The turn-of-the-year is hypothesized to be a time of renewed optimism.

Effect of the Trading Day on Stock Returns (Testing Monday Effect and Friday Effect)

The results in this study support the occurrence of the Monday Effect. The Monday Effect is one part of the day of the week Effect.

It is a seasonal anomaly or calendar Effects that occur in financial markets, that is when the stock returns are significantly negative on Mondays (Mehdian & Perry, 2002). The anomaly violates the hypothesis regarding the weak market efficiency. The weak market efficiency hypothesis assumes that information contained in historical stock prices fully reflected in current stock prices. The information cannot be used to obtain excess returns. The random walk model study of the Monday Effect by (French, 1980; Lakonishok & Maberly, 1990), proved that returns on Monday were different from returns in other days. The seasonal anomalies or calendar Effects on financial markets cause a return on

Table 4. Results of Testing Hypothesis 4 and Hypothesis 5

Variable	All Months			January		Non-January		
	Coef	t-Stat		Coef	t-Stat	Coef	t-Stat	
C	0.00	2.16	**	-3.54E-05	-0.03	0.00	2.23	**
DSIZE	-0.00	-2.98	***	0.00	1.17	-0.00	-3.34	***
N Obs	10710			945		9765		

Effect of the Trading in January on Stock Returns (Testing January Effect)

The result and analysis do not fully support the occurrence of the January Effect. Based on tests using the dummy regression model to differentiate return in January and return in Non-January months, fail to prove the seasonal pattern. Moreover, the study found that the seasonal pattern of trading dominated occur in every month, except in June. Therefore this study fails to support several hypotheses as suggested to explain the January seasonal in stock returns. The hypothesis is a tax-loss selling hypothesis, an information hypothesis, or a behavioral framework

Monday to be predictable. Then, the market guideline can be designed that can take advantage of the seasonal pattern to get abnormal returns. Whereas in an efficient market, there should not be a constant pattern of price movements and can be used to get abnormal returns.

Investor psychological factors mostly cause the Monday Effect (Brahmana et al., 2011; Brahmana et al., 2015; Rita et al., 2018). Stock traders are more likely to feel less excited on Monday because Monday is the day that starts a week-long workday. The reason investors are not eager to trade on Monday since on Monday the average employee for all companies in America

experienced psychological makeup, meaning in these conditions, behavior and employee attitudes are influenced by perceptions of Monday's existence as lethargy the beginning of work after a long two-day holiday. As a result, investors feel pessimistic about the shares held when compared to other trading days. Investors tend to feel more appropriate to sell at a lower price on Monday compared to holding these shares for resale in the following trading days. The result is a negative return for the trading period on Monday.

The results contradict the Friday Effect hypothesis. The hypothesis states that there is a late-week influence that results in a symptom indicating that the stock return on Friday will be higher than other trading days.

Based on literature studies from several financial journals, it found that several researchers have tried to build a theoretical framework that can explain the causes of weekend Effects.

The low return on Monday identifies that sales orders are more than purchase orders. Thus there was a sales order surplus on Monday. Generally, individual investors are not professional investors. They will carry out readjustment after assessing portfolio performance during the trading day a week before, and they will take action in the form of a purchase or sale order on the following Monday.

Most of the recommendations made by brokers to institutional investors are purchase orders; in other words, they become net buyers. The customers can respond quickly to purchase recommendations, while customers who can respond to sales recommendations are only customers who have individual shares to sell.

Indonesian daily activities. The Effect of trading days on the timing of sales and purchases is something that makes sense. Human activity depends on the day of the week as is the habit of many people to be creative on Sundays, or watching movies on Saturday nights. Stock exchange activities also have a pattern of routines that are similar to human activities, depending on the pattern of the day.

Settlement procedure. In the economic concept, there is an opportunity cost that will increase

if the settlement time is longer. The longer the procedure for settlement of transactions means, the higher the opportunity cost of retained funds.

Stocks traded rarely and included in the market index will be a stabilizer of stock prices and the components of the market index numbers that do not always move seasonally.

Effect of Company Size on Stock Returns (Testing Size Effect)

Based on the results, there was a size Effect on the Indonesia Stock Exchange. The results show that the company size coefficient has a negative sign, which means that the larger the size of the company, the stock return will decrease significantly. These results support the hypothesis, which states that the level of stock returns in small-sized companies is higher than the big-sized stock returns.

The size Effect is one type of company anomaly, which defines as returns on small companies tend to be more significant even though it has adjusted for the risk. Stock returns in small companies are more fluctuating than large companies due to the risks of smaller companies is higher. Therefore, investors will be faster selling or buying shares of small companies following the information absorbed. The size Effect shows that there is a mismatch with the semi-strong market efficiency form. It allows investors to get high returns based on public information found in company stocks with small market capitalization.

This result implies that shares in small companies still have the opportunity to be traded intensely on the Indonesian capital market. In theory, these results indirectly show that this study can prove an inefficient market hypothesis in a weak form through testing the relationship of returns to company characteristics, in this case, the size of the company.

CONCLUSION AND RECOMMENDATION

The results of testing the first hypothesis do not fully support the occurrence of the January Effect. Thus the first hypothesis which states there is the influence of January trading on the

daily return of shares on the Stock Exchange Indonesia does not accept.

The results of the second and third hypotheses testing indicate that there is a significant Effect of trading days in one week on LQ45 stock returns listed on the Indonesia Stock Exchange. Thus the hypothesis which states there is the influence of trading days on the daily return of shares on the Stock Exchange Indonesia accepted. The test results show that there was a Monday Effect on stock trading in January on the Indonesia Stock Exchange, which resulted in negative stock returns at the beginning of the week. Thus it was proven that the Monday Effect occurred in trading stocks on the Indonesia Stock Exchange. On the contrary, the study shows that there is no weekend Effect on stock trading in the Indonesia Stock Exchange. There is a significant negative coefficient of Friday trading day on stock returns on weekends. Thus Weekend Effect does not occur in stock trading in Indonesia stock exchange. The reasons are various because it might be the arrival of wrong information on Friday or the behavioral framework hypothesis of investors that pessimistic during entire days in the turn-of-the-year.

The data analysis shows that the bigger the size of the company, the stock returns will be smaller. It concludes that there is a size Effect in the Indonesian capital market. The results of the analysis prove the hypothesis that stock returns in small companies are higher than the stock return on big companies.

REFERENCES

- Abu Bakar, A., Siganos, A., & Vagenas-Nanos, E. (2014). Does Mood Explain the Monday Effect?. *Journal of Forecasting*, 33(6), 409-418.
- Alagidede, P. (2008). Day of the Week Seasonality in African Stock Markets. *Applied Financial Economics Letters*, 4(2), 115-120.
- Asteriou, D., & Kavetsos, G. (2006). Testing for the Existence of the 'January Effect' in Transition Economies. *Applied Financial Economics Letters*, 2(6), 375-381.
- Balint, C., & Gică, O. (2012). Is the January Effect Present on the Romanian Capital Market?. *Procedia-Social and Behavioral Sciences*, 58, 523-532.
- Banz, R. W. (1981). The Relationship between Return and Market Value of Common Stocks. *Journal of Financial Economics*, 9(1), 3-18.
- Brahmana, R. K., Hooy, C. W., & Ahmad, Z. (2011). Psychological Biases Abilities on Constructing Weekend Anomaly. Available at SSRN 1914124.
- Brahmana, R., Hooy, C. W., & Ahmad, Z. (2015). Monday Irrationality of Investors in Bursa Malaysia: the Role of Psychological Biases. *Malaysian Journal of Economic Studies*, 52(2), 227-243.
- Brown, P., Kleidon, A. W., & Marsh, T. A. (1983). New Evidence on the Nature of Size-Related Anomalies in Stock Prices. *Journal of Financial Economics*, 12(1), 33-56.
- Cao, X. L., Premachandra, I. M., Bhabra, G. S., & Tang, Y. P. (2009). Firm Size and the Pre-Holiday Effect in New Zealand. *International Research Journal of Finance and Economics*, 32(10), 171-187.
- Chang, E. C., Pinegar, J. M., & Ravichandran, R. (1993). International Evidence on the Robustness of the Day-of-the-Week Effect. *Journal of Financial and Quantitative Analysis*, 28(4), 497-513.
- Chen, T. C., & Chien, C. C. (2011). Size Effect in January and Cultural Influences in an Emerging Stock Market: the Perspective of Behavioral Finance. *Pacific-Basin Finance Journal*, 19(2), 208-229.
- Chiah, M., & Zhong, A. (2019). Day-of-the-Week Effect in Anomaly Returns: International Evidence. *Economics Letters*. 182(3), 90-92.
- Chou, J., Das, P. K., & Uma Rao, S. P. (2011). The Value Premium and the January Effect. *Managerial Finance*, 37(6), 517-536.
- Cicccone, S. J. (2011). Investor Optimism, False Hopes and the January Effect. *Journal of Behavioral Finance*, 12(3), 158-168.
- Condoyanni, L., O'Hanlono, J., & Ward, C. W. (1987). Day of the week Effects on Stock Returns: International Evidence. *Journal of Business Finance and Accounting*, 14(2), 159-174.
- Dicle, M. F., & Levendis, J. D. (2014). The Day-of-the-Week Effect Revisited: International Evidence. *Journal of Economics and Finance*, 38(3), 407-437.
- Draper, P., & Paudyal, K. (2002). Explaining Monday Returns. *Journal of Financial Research*, 25(4), 507-520.

- Dubois, M., & Louvet, P. (1996). The Day-of-the-Week Effect: the International Evidence. *Journal of Banking and Finance*, 20(9), 1463-1484.
- Fama, E. F., & French, K. R. (2016). Dissecting Anomalies with a Five-Factor Model. *The Review of Financial Studies*, 29(1), 69-103.
- French, K. R. (1980). Stock Returns and the Weekend Effect. *Journal of Financial Economics*, 8(1), 55-69.
- Gharaibeh, O. (2017). The January Effect: Evidence from Four Arabic Market Indices. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(1), 144-150.
- Guler, S. (2013). January Effect in Stock Returns: Evidence from Emerging Markets. *Interdisciplinary Journal of Contemporary Research in Business*, 5(4), 641-648.
- Haug, M., & Hirschey, M. (2006). The January Effect. *Financial Analysts Journal*, 62(5), 78-88.
- Islam, R., & Sultana, N. (2015). Day of the Week Effect on Stock Return and Volatility: Evidence from Chittagong Stock Exchange. *European Journal of Business and Management*, 7(3), 165-172.
- Keim, D. B. (1983). Size-Related Anomalies and Stock Return Seasonality: Further Empirical Evidence. *Journal of Financial Economics*, 12(1), 13-32.
- Kim, C. W., & Park, J. (1994). Holiday Effects and Stock Returns: Further Evidence. *Journal of Financial and Quantitative Analysis*, 29(1), 145-157.
- Lakonishok, J., & Maberly, E. (1990). The Weekend Effect: Trading Patterns of Individual and Institutional Investors. *The Journal of Finance*, 45(1), 231-243.
- Li, J., & Gong, J. (2015). Volatility Risk and January Effect: Evidence from Japan. *International Journal of Economics and Finance*, 7(6), 1-30.
- Malkiel, B. G., & Fama, E. F. (1970). Efficient Capital Markets: a Review of Theory and Empirical Work. *The Journal of Finance*, 25(2), 383-417.
- Mazviona, B. W., & Nyangara, D. (2014). Does Firm Size Affect Stock Returns? Evidence from the Zimbabwe Stock Exchange. *International Journal of Business and Economic Development (IJBED)*, 2(3), 13-17.
- Mehdian, S., & Perry, M. J. (2002). Anomalies in US Equity Markets: a Re-Examination of the January Effect. *Applied Financial Economics*, 12(2), 141-145.
- Moller, N., & Zilca, S. (2008). The Evolution of the January Effect. *Journal of Banking & Finance*, 32(3), 447-457.
- Muhammad, N. M. N., & Rahman, N. M. N. A. (2010). Efficient Market Hypothesis and Market Anomaly: Evidence from Day-of-the-Week Effect of Malaysian Exchange. *International Journal of Economics and Finance*, 2(2), 35-42.
- Perez, G. (2018). Does the January Effect Still Exist?. *International Journal of Financial Research*, 9(1), 50-73.
- Rathinasamy, R. S., & Mantripragada, K. G. (1996). The January Size Effect Revisited: Is it a Case of Risk Mismeasurement?. *Journal of Financial and Strategic Decisions*, 9(3), 9-14.
- Reinganum, M. R. (1983). The Anomalous Stock Market Behavior of Small Firms in January: Empirical Tests for tax-loss Selling Effects. *Journal of Financial Economics*, 12(1), 89-104.
- Rita, M. R., Wahyudi, S., & Muharam, H. (2018). Bad Friday, Monday Effect and Political Issue: Application of ARCH-GARCH Model to Analyze Seasonal Pattern of Stock Return. *International Journal of Engineering & Technology*, 7(3.30), 38-47.
- Rogalski, R. J., & Tinic, S. M. (1986). The January Size Effect: Anomaly or Risk Mismeasurement?. *Financial Analysts Journal*, 42(6), 63-70.
- Schwert, G. W. (2003). Anomalies and Market Efficiency. In G.M. Constantinides, M. Harris and R.M. Stulz, *Handbook of the Economics of Finance*, 939-974.
- Seyhun, H. N. (1988). The January Effect and Aggregate Insider Trading. *The Journal of Finance*, 43(1), 129-141.
- Starks, L. T., Yong, L., & Zheng, L. (2006). Tax-loss Selling and the January Effect: Evidence from Municipal Bond Closed-End Funds. *The Journal of Finance*, 61(6), 3049-3067.
- Sun, Q., & Tong, W. H. (2010). Risk and the January Effect. *Journal of Banking & Finance*, 34(5), 965-974.
- Tang, G. Y., & Kwok, K. H. (1997). Day of the Week Effect in International Portfolio Diversification: January vs non-January. *Japan and the World Economy*, 9(3), 335-352.
- Thaler, R. H. (1987). Anomalies: The January Effect. *Journal of Economic Perspectives*, 1(1), 197-201.
- Van Dijk, M. A. (2011). Is Size Dead? a Review of the Size Effect in Equity Returns. *Journal of Banking & Finance*, 35(12), 3263-3274.
- Zhang, J., Lai, Y., & Lin, J. (2017). The Day-of-the-Week Effects of Stock Markets in Different Countries. *Finance Research Letters*, 20(1), 47-62.