CHAPTER I

INTRODUCTION

1.1. Research Background

Investment sector in Indonesia offers promising opportunities that is supported by various tailwinds. The people in the young generation, fast growing middle class, and advantageous geographical location contributes to its rising status as a favourable investment destination Indonesian environment is an investor-welcome and having the potential to develop. It leads to development of stock market in the Indonesia (Fernandez et al., 2020).

Figure 1.1 Indonesian investor growth 2017-2023

The development of Indonesian stock market is able to be seen from the statistical data. According to Indonesia central securities depository (KSEI) it shows the growth of investor in Indonesia for last seven years. The increasing of investor's number reach almost five times compares to data last five years. KSEI records 12,17 million investors in capital market per December 2023. The data

shows the potential of Indonesian capital market to grow and individual awareness to invest.

The stock market in Indonesia is overseen by Indonesia Stock Exchange (IDX), also called as *PT Bursa Efek Indonesia*. It provides various market data and trading information for investors. The increasing of investors leads to the study on how stock market behaves. Several research have carried out the study from variety contexts to determine behaviour of stock market. Shehadeh & Zheng, (2023) state that the behaviour of stock market is a complex which turns to be a random pattern and contradict the theory of efficiency market hypothesis (EMH). The random pattern is related to how to obtain the return.

Stock market behaviour become the analysis by the investor to get the return. The abnormal return is used to be learned by the investors to capture the pattern on event strategy when to buy or sell the stock. Research indicates inefficiency for weak form, suggesting that it is the possibility for the investors to get the non-normal returns from using the timing strategies (Munir & Sook Ching., 2019).

Fama (1970) studies the behavioural in stock market, Efficient market hypothesis (EMH). It refers that the current stock prices reflect the publicly available information, and instantaneously respond to the new information that arrive to the markets with a random pattern. The hypothesis classifies market efficiency in the three forms, namely market efficiency in weak, efficient form in the semi-strong form and efficient in the strong form.

According to Nurul & Setiyawan (2022) There is a deviation which is able to influence the stock price. The deviation shows that investors are not always racist

in making decisions. Seeing from the investor view, the goal of investing is to obtain the return. The return come from two options which are dividend yield and capital gain or loss. Dividend yield means the income received from the dividends paid to the holders of a company's stock and capital gain has a meaning for the profit that happens when an investment is traded for a higher price than original buying price. Dividend yield reflects how much an investor will earn aside from any capital gains in the stock and is expressed as a percentage.

In general, investors have a preference for capital gains, and the tax treatment of dividend returns is different from that of capital gains. Investor must know when the best timing to invest to earn the capital gain from their investment. Aside from the source of return, there is abnormal return which has a meaning for returns are the difference between the return or actual profit rate (actual return) with the expected profit (expected return). Abnormal returns are often used to evaluate the performance of securities (Iqbal et al., 2023). The random pattern is investigated by many researches and the timing strategies is called the calendar anomalies in stock market. It is also shown from a study that the happening of calendar anomalies is increasingly significant in the 20th century comparing to 90s (Plastun et al., 2019).

Market anomalies define as the strategies which contrast to the concept of Efficient Market Hypothesis, when price of stocks reflects all the available information. Investors apply this approach to produce the abnormal return from the stock market. The random pattern is known as the calendar effects. The anomaly violates the hypothesis regarding form market efficiency weak due to returns that are not random, but predictable based on the influence of a particular calendar. This

calendar effect includes the day of week effect, the month of year effect, holiday effect, turn of month effect, and week four effect.

The Day of The Week Effect refers to returns that are abnormal high compare to other days in the. Based on the efficient market hypothesis, stock returns are not diverse on every day. However, in the day of week effect, the diversity in returns from each of trading day of week occurred (Chatzitzisi et al., 2021). According to Plastun et al. (2019) the study on Ukraine stock market shows strong proven for day of week effects for all sectors. In addition, Iqbal et al. (2023) did a research study about Monday effect which is shown a significant difference in the Monday from banking sector in Indonesia. Therefore, there is also a Monday Effect for companies which are included in the IDX-30 index before and after Covid-19 pandemic (Ayu et al., 2018). Continuous study that is examine a study in Australia evaluates the Tuesday effect that occurs comparing to the US market (Chiah & Zhong, 2021).

Research for day week effect in Indonesia also has been done by some researchers. Nurul & Setiyawan (2022) examine the effect on company listed in IDX30 and has proven the occurrence of the day of week effect from Indonesian market which shows highest return for Friday and lowest occurs on Monday. Therefore, according to Luxianto et al.(2020) who study in Indonesia examines there is a different activity of selling on Monday that is affected the stock return.

The next calendar effect is month of the year effect. Which means there is an existence of a pattern in the returns of the financial assets where the return of a certain month of year is significantly higher than the other months. This effect has

investigated in the several studies in the world. According to Iqbal et al. (2023) who investigate to look at market anomalies for the January effect in the banking sub-sector companies in Indonesia. There is no occurrence of month of year effect for Indonesian banking sector. Meanwhile some studies prove the happening of effect. Acharya et al. (2022) who conducted research to determine the month of year effect on Indian share by investigating from two index, Sensex and Nifty. The research finds the effect on September from both of index.

Harshita et al. (2019) also find the existence of month of year effect. The result is higher returns for November and December at the index level from Indian market. In another countries, Malaysian market as the Southeast Asian country, Munir & Sook Ching (2019) also did the study about the existence of this effect by using threshold GARCH and suggest the monthly seasonality effect based on Malaysian stock market. There is a gap where the other country has the effect on their market and month of the year is the seasonal category that is familiar to be studied. That is why this effect still need to be examined and captured from Indonesian stock market.

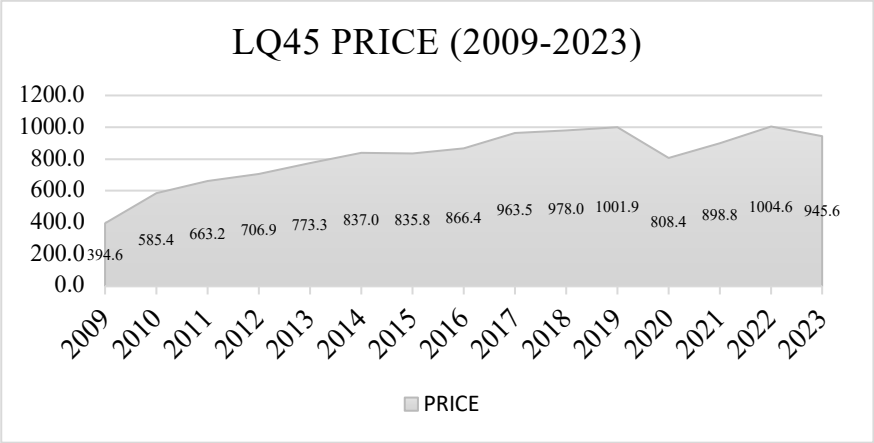
Turn of month (TOM) effect defines as diversity from return anomalies in the last few days for each month and first few days of next month. Lee & Kim (2022) did the research from Korean market and determine the individual and institutional traders do not sell and purchase more stocks in the turn of the month (TOM) than they do for rest of the month (ROM). Additionally, Chen et al. (2019) also detect the existence of this effect. The study examines the Turn of Month in New Zealand market and discover that the returns on last three days of calendar month are, on

average, positive and significantly higher than on the other days. However, based on Vasileiou (2018) examine the several countries in Europe and there is no proven that the TOM effect happens since there is increasing of liquidity during the TOM days. The study of this effect is not as much the day of week and month of year effect which refers to less of research from Indonesian market for this effect. Some researchers also suggest the several study about the existence of this effect.

The existence of calendar effect would be examined by applying GARCH models. The Efficient Market Hypothesis, Fama (1970) become the foundation for further research in the understanding on stock market behaviour. GARCH (Generalized Autoregressive Conditional Heteroskedasticity) define as a statistical model to capture and analyse the volatility clustering and the time-varying volatility in time series data. The GARCH model is an extension of ARCH (Autoregressive Conditional Heteroskedasticity) model. The using of GARCH to test the calendar effect is already studied by many researches. One of the studies is from Malaysia where the study uses the threshold GARCH to determine the calendar effect on Malaysia stock market (Munir & Sook Choiing, 2019).

Stock index classification is based on liquidity is a sub-classification of indices that groups indices based on high transaction liquidity and huge market capitalization encouraged by well company fundamentals. LQ 45 is an index that measures the price performance of 45 shares that have high liquidity and substantial market capitalization and are supported by the fundamental company. Adrianto (2020) study the financial literacy and the likelihood of investors to select blue-

chips which is from company listed in LQ45. The result shows a positive relation between them.



Source: finance.yahoo.com (2024)

Figure 1.2 Index prices of LQ45 from 2009-2023

The LQ45 index includes companies from various sectors such as finance, consumer goods, mining, infrastructure, and telecommunications. The selection of companies for the index is based on several criteria, including market capitalization, liquidity, and trading frequency. Figure 1.2 represent the movement of index price of LQ45 since 2009. The increasing of this index is Stabil and there is tiny fluctuation which is caused by a covid-19 outbreak in 2020. Besides that, the graph constant to increase years by years and represent the top 45 companies that have good liquidity.

LQ45 is an index with the most liquid in Indonesia stock market, this Index refers to the liquidity with the 45 companies listed in the Index with particular criteria such as huge value of transaction, highest capitalization, and future prospect growth. However, the market uncertainties and unpredictable fluctuation that is

called as market anomalies, the requirement and evaluation selection of LQ 45 is changing and dynamics (Malini, 2019)

Beside market capability to obtain the profit, the primary types of information that investors are attaching for their investment decisions is the news on environmental, social and governance (ESG) types (Nyakurukwa & Seetharam, 2023). Another study in Indonesia also examines on how Environment, social, and Corporate Governance can be more appealing to the investor with consideration on green stock and ESG issue nowadays. It determines the relation between dividend policy and ESG in Indonesia (Awwalin et al., 2023)

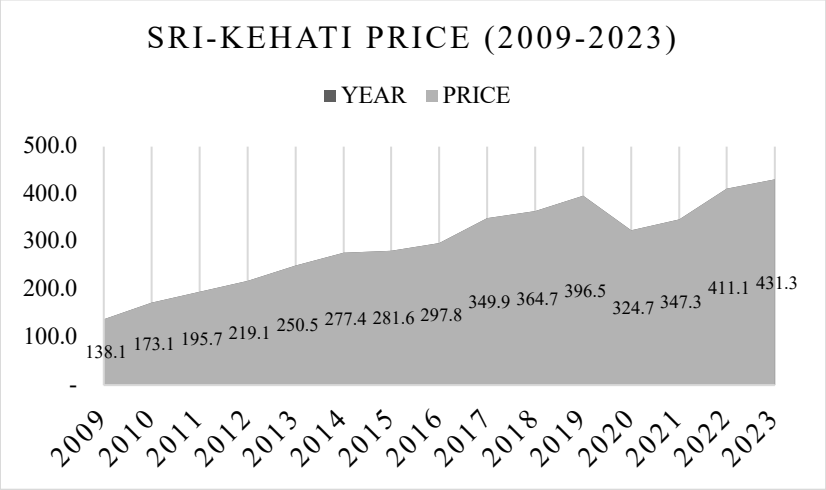
In addition, a study tests the effect of corporate environmental, social, and governance (ESG) rate on capital market performance from a firm. Applying Chinese listed companies from the last ten years. It results that the ESG rating has significantly related to the liquidity of the stock. Furthermore, investors' attention become the mediator of the relationship between liquidity of stock and the ESG rate (He et al., 2023).

The relation between ESG and stock return predicting is found on another study. It shows that company's current ESG profile is shown in the CSR can positively forecast the expected stock returns. Yu et al. (2023). Therefore, it shows the possibility of negative news about ESG disclosure is lower when stock is in the position of higher returns of volatility (De Vincentiis, 2024). Another study in Europe, North America, and China about the ESG stock index, it finds the strong connectedness to the return and the volatility (Wan et al., 2024), (Liu , 2023), and (Li , 2023).

In addition, research investigates the performance of investment between the top nine ESG and the LQ45 index. Then, this research tests the effect of the score of ESG on the financial performance. The result is shown that the ESG portfolio has a better Sharpe ratio compare to the LQ45 index (Nareswari , 2023). Considering of the interesting of investor for green investment and several study about green investment. Indonesian stock market provides an index based on environmental, social, and governance consideration to categorize companies stock in certain indexes as thematic index. One of the indices and has the long active index in the Indonesian market is SRI-Kehati index.

The SRI-Kehati index in Indonesia is a socially responsible investment index that was developed by the KEHATI Foundation in collaboration with the Indonesian Stock Exchange (IDX) in 2009. The index is designed to evaluate the performance of companies based on their environmental, social, and governance (ESG) practices. The SRI-Kehati Index is not directly related to the SDGs, but it does align with the principles of sustainable development and can be seen as a step towards incorporating the SDGs into the Indonesian capital market (Lhutfi , 2024).

SRI-Kehati is an classification of indices based on environmental themes which is a sub-classification of indexes that groups indices based on Environmental, Social and Governance (ESG) themes. SRI-Kehati index which also refers to an index that measures share price of performance 25 companies which have good performance in supporting sustainable businesses, and have the awareness of environment, social and good corporate governance and it is called Sustainable and Responsible Investment (IDX Stock Index Handbook v1.2, 2021).



Source: www.investing.com (2024)

Figure 1.3 Index price of SRI-KEHATI from 2009-2023

Based on figure 1.3, over the last fourteen years the SRI-KEHATI index has shown positive trend in Indonesian market. It evaluates performance of listed firms in terms of environmental, social, and governance (ESG) criteria. Some researchs have been conducted to study of the effect of the SRI-Kehati index on the return, value, and corporate governance of the listed firms in Indonesia.

These studies have shown that SRI-Kehati listed companies have higher Return on Equity (RoE), better governance, and a capacity to grow better compared to non-member companies. The index has demonstrated consistent performance, with a significant effect on the return, and its trend has been positive since its inception (Putra & Adrianto, 2020).

A study shows that there is no significant diversity between the risk rate and return on the SRI-Kehati and LQ45 stock indices. However, investors have shown interest and trust in the index, as evidenced by its performance being consistently above other indices like the LQ45 and SRI-Kehati index. The SRI-Kehati index is part of the growing field of Sustainable Responsible Investment (SRI). The

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changing of interest from the liquidity to the green investment become the reason to compare the two indexes. The aims of two index chosen to examine the different of seasonal pattern occurs between the indexes. According who tests the difference level of risk and return between two indexes and result there is no significant difference between two stock indexes to Yasya et al. (2022).

The study wants toh test the effect of seasonal anomaly by capturing volatility of Daily Effect, Monthly Effect, and Turn of Month Effect in Indonesia stock market with two types of indices, LQ45 and SRI-Kehati. The data use the secondary data from historical share prices that is obtained from the finance.yahoo.com and www.investing.com from 1st January 2019 to 31st December 2023. Data use is five years historical data which is longer than the previous research which only three years to obtain the result for calendar effect (Riyani et al., 2022).

The EMH is related to GARCH models because GARCH models can be used to test the EMH. By estimating the parameters of a GARCH model, researchers can test whether the EMH is violated by comparing the actual returns of a stock or asset to the returns predicted by the GARCH model. If the actual returns deviate significantly from the predicted returns, it may indicate that the market is not efficient in incorporating all available information into asset prices, which would be a violation of the EMH (Guirguis, 2018).

The data processing uses the dummy variable to capture the effect on Indonesian stock price by using GARCH models. The model is used to find the volatility of the historical time series data. The reason why the research is studied because there is no significant research to capture the effect on Indonesia using the

newest historical data. The data use the last five years index price which is included the time series. The reason of using the five years data because the data still relevant and able to represent the recent pattern in the stock market.

From what it has been summed up, then author is having interest for conducting the research with title: **The Day of The Week Effect, Month of The Year Effect, And Turn of Month Effect Using GARCH Model from Indonesian Stock Market Indices LQ45 And SRI-Kehati Data 2019-2023**

1.2. Problem Statement

From the background explained above, the formulation for the problem in this study is:

1. How does the day of the week effect of LQ45 index?
2. How does the day of the week effect of SRI-KEHATI index?
3. How does the Month of the year effect of LQ45 index?
4. How does the Month of the year effect of SRI-KEHATI index?
5. How does Turn of the month effect of LQ45 index?
6. How does Turn of the month effect of SRI-KEHATI index?
7. Does both of indices have the different pattern on calendar effect?

1.3. Research Objective

From the background and problem that has been stated previously, the objectives of the research are:

1. To examine the influence of Day of The Week Effect toward index return in LQ45 index 2019 – 2023
2. To examine the influence of Day of The Week Effect toward index return in SRI-KEHATI index 2019 – 2023
3. To examine the influence of Month of the year Effect toward index return in LQ45 index 2019 – 2023
4. To examine the influence of Month of the year Effect toward index return in SRI-KEHATI index 2019 – 2023
5. To examine the influence of Turn of the month Effect toward index return in LQ45 index 2019 – 2023
6. To examine the influence of Turn of the month Effect toward index return in SRIKEHATI index 2019 – 2023
7. To examine the different of calendar Effect toward stock return in LQ45 and SRI-KEHATI index 2019 – 2023

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1.4.Contributions of Research

This research is intended to provide the benefits for interested parties such as:

1. For Writers

   As input to add insight and understanding on stock market anomalies such as in the day of week effect, month of year effect, and turn of month effect through time series data process from Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model.

2. For Investor

   The research is expected that this research can be used as a consideration for investors to invest in the certain period of time.

3. For Academics

   This study can be used as a reference for the field of similar research and as a reference for further research development.

1.5. Scope of the Research

The purpose of this study is to give an indication of the efficiency level of the Indonesian stock market through a specific investigation of the day of the week effect, month of the year effect, and turn of month effect. This sets aside the plausible impact of other market anomalies such as the week four effect or the turn of the year effect. The limited time frame and resources the authors possessed have compelled us to complete the study by using solely the LQ45 and SRI-Kehati index daily return from 2019-2023.

1.6. Systematic of The Research

Systematics of writing in this study is made to provide overall picture of research. As for systematics of this research, it consists of five chapters, namely as follows:

CHAPTER 1 : INTRODUCTION

This chapter describes the background of the problem, the formulation of the problem, the research objectives, the research utilization, the scope and systematics of the research.

CHAPTER 2: LITERATURE REVIEW

This chapter discusses the theories related to problems discussed in this study. This chapter will also discuss previous research, hypothesis development, and conceptual framework models that will be guided at the data processing stage.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter discusses population and samples, sampling techniques, types and sources of data, operational definitions, and variable measurements as well as data analysis methods used to prove hypotheses.

CHAPTER 4: RESULTS AND DICUSSION

This chapter discusses the results of process from data processed and data analysis used to prove hypotheses.

CHAPTER 5: CONCLUSION

This chapter contains the conclusions on the research that has been done, the implications of the research results, the limitations of the research, and suggestions.