CHAPTER I

INTRODUCTION

1.1 Introduction

The stock market broadly refers to a place where a party can buy, sell, and issue ownership certificates or shares of a company that goes public. It was created as a venue for the exchange of securities between buyers and sellers. The stock market provides and guarantees a safe and regulated environment so that market participants can transact shares safely, comfortably, and confidently. The stock market is a primary market that offers companies the opportunity to issue their shares for the first time in an initial public offering (IPO) and sell them to the public. Companies can obtain the funding they require through this activity from investors. To facilitate this process, a company needs a market in which to sell those shares, so this is where the role of the stock market works, they collect funds from people who want to invest and distribute them to parties who may need funds for the development of their business management. After placing funds for investment in the selected company, Investors will get shares or a portion of ownership in that company which they can hold for as long as they want if there is still potential for increasing share prices and potential income in the form of dividend payments.

The stock market serves as a conduit for obtaining funding from the general public, channel funds to companies and receive payments for their services from companies and their financial partners. In the trade of a company's shares, the stock

market is in charge of assuring price transparency, liquidity, pricing, and fair dealing. Stock exchanges retain trading systems that effectively manage buy or sell orders from diverse market participants even though all significant stock markets around the globe operate electronically. They carry out a price matching function to make it easier to execute trades at a reasonable price that both buyers and sellers have agreed upon.

The stock market maintains an official website where users may view all the most recent stock market news and announcements as well as the financial statements of the firms listed on the stock market. The stock market is used as a medium through which individuals can channel savings in the form of productive investment opportunities efficiently. In the long term, this help in capital formation and economic growth for the country (Chen 2022). It proven by the research of (Pradhan 2018) in G-20 countries that there is an causality between the development of the stock market and per capita economic growth.

By the time, As a result of increased financial deregulation and technological advancements, stock markets have become more mobile from one nation to the next. As a result, over the past few years, there has been a noticeable increase in the interdependence or integration of stock markets between various nations. Investors, academic researchers, and policymakers are all very interested in tracking the degree of interconnectedness between the various stock markets as a result of the integration that takes place between stock markets from various regions of the world. Globalization that occurs in the stock market makes investors able to invest in the

stock market in the country they want. The disappearance of cross-border between stock markets increases the opportunity for investors to be able to diversify their risk by investing in other countries and ultimately leads to integration between stock markets between countries. Integration between stock markets can be defined as a situation in which one stock market will affect the movement of other stock markets in the same direction (Habiba et al. 2020). The integration, which is the implication of the process of financial liberalization, leads to cross border capital flow between countries more freely, but beside that the financial integration in financial markets will have a higher vulnerability to shocks. When a shock occurs in one nation, its effects can spread to another, which might lead to financial instability in connected countries' financial markets (Beck and Stijn 2013). These factors can influence the investor sentiment toward buying or selling stocks that leads to stock market volatility.

Investor sentiment or expectation about some issues or news could exhibit optimism or pessimism. Sentiment will cause either an under reaction or an overreaction in the market, which will affect changes in trading volume, volatility, and prices and, as a result, stock returns. (Tuyon, Ahmad, and Matahir 2016). Unpredictability, uncertainty, and risk are all determined by volatility, which is the fluctuation of a variable over a certain period of time.

Conditions that occur in the future are uncertain and the existence of information that can change investors sentiment by changing their perceptions of future economic conditions that can causes changes in stock prices in the market. Coupled with a

condition that can change rapidly, making stock prices volatile and ultimately increasing risk. So by knowing the risks that will be faced, we will be able to control our behavior to be able to manage these risks.

Bae and Zhang (2015) mentioned that volatility spillover effects to a country had a disruptive effects if it occurred in crisis period, because it can lead to financial loss. There are two possible reasons why that financial loss can happen in crisis period. First, because foreign investors could quickly exit integrated markets, there was a fast outflow of capital from such markets. Second, a market's exposure to risk as an integrated one might result in large losses as a result of a crisis' financial contagion.

In December 2019 the first human identified have suffered COVID-19 virus. COVID-19 is an infectious illness caused by SARS-Cov-2 that produces fever, cough, muscular pains, and neck issues. The World Health Organization declared the COVID-19 outbreak as a Public Health Emergency of International Concern on 30 January 2020, and a pandemic which is the worldwide spread of a new disease on 11 March 2020. By this pandemic, authorities imposed strict quarantines on their populations and mandated the suspension of the bulk of commercial activity in response to the pandemic of this virus, which is thought to be a virus that is exceedingly infectious and deadly. Due to the fact that the majority of firms cannot continue to operate in full during the quarantine, they have opted to decrease labor costs by terminating employees.

The feel-good element quickly transforms into a fear factor for shareholders during an early crisis, resulting in a bear market without significant change to the

fundamentals of firms (Totir 2011). COVID-19 has infected most of the world stock market, including Indonesia, as evidenced by decline in stock prices, with many investors suffering losses.

Followed by the condition that in 2021 the pandemic condition is getting worst, because the COVID-19 deaths in 2021 worldwide have surpassed the total number of COVID-19 deaths in all of 2020, according to a Wall Street Journal analysis of Johns Hopkins on June 2021. 1,884,146 people have died of COVID-19 in 2021, compared with the 1,880,510 in 2020. As a result, there is a severe decline in economic activity and consumption, which lowers the predicted stream of future cash flows (Mazur, Dang, and Vega 2021). The economy's poor financial performance has resulted market failure and can be transmitted to other markets and this will lead to a rise in volatility. The decrease in stock return value (negative return) typically exhibits a propensity of negative connection with the changes in volatility return, making the stocks riskier and hence increasing its volatility. The "leverage effect," often referred to as the "asymmetric effect," is the name of this phenomena.

The condition of a country's financial market can be described through the main index in that country, In Indonesia the main index used is IHSG (Indeks Harga Saham Gabungan). According to IDX website, at the beginning of 2020, the IHSG was perched at a level above Rp. 6,300, but when COVID-19 struck, the IHSG fell to its lowest point below the level of Rp. 4,000 in the last week of March 2020.

One way to measure the risk is to look at stock price volatility statistics. Volatility can pose risks and uncertainties to investors. (Robiyanto, Wahyudi, and Pangestuti

2017). In order to mitigate this risk, investors use hedging or the proper asset allocation strategy. Looking for the volatility is a must in the finance domain to maintain the risk. We may assess the probability of getting a specific outcome with estimates of volatility and the central tendency. Diversifying assets to create effective portfolios with greater risk to reward ratios is a common difficulty for financial analysts.

When using volatility to model uncertainty, you may evaluate a portfolio by looking at two things: investment possibilities and prospective losses. As a result, the assessment of volatility serves as a reference for deciding investment decisions and assessing assets and risks in the present (Naik and Reddy 2021).

So with this research I want to investigate the volatility spillovers and leverage effect from the main global stock markets toward Indonesia stock market before COVID-19 pandemic and during COVID-19 pandemic. In spite of this pandemic illness, Indonesia's stock market has a positive future, as can be shown by looking at its success and growth to become one of the biggest stock exchanges in Asia, regarding to Bloomberg, Indonesia to become South East Asia Biggest stock markets.

There are some reasons that support the volatility spillovers from one market to another market according to Sari, Achsani, and Sartono (2017) that stock market who have dominant economic power, common investor groups which means countries who are geographically adjacent which have normally a similar group of investors on their markets and stock markets who have multiple stock listings or traded on multiple markets, so the shock on one market will transmitted to other market.

Furthermore the volatility spillovers commonly come from the developed stock markets as the main risk transmitters and emerging stock markets as the main risk receivers, this is according to Li (2021). By this reasons the researcher tried to find the volatility spillovers from United States, Japan, Hong Kong and Singapore.

The United States stock market was chosen because United States come from the countries who have dominant economic power and because United States is the one of the many market-moving factors that affect global financial markets, the outlook for economic developments in the United States broadly influences the perceptions and actions of global financial market players. This is because the impact of the United States economy is still considered the main growth engine for the global economy (besides China), the S&P 500 index used in this research, because this index contains the stocks of the 500 largest companies in the United States.

Japan stock market was chosen because they have dominant economic power toward Indonesia and also have a common investor group and part of a group of developed countries in the Asian region that play an important role as an information leader in the regional market and Indonesia as one of the countries in Asia that has economic and financial activities affiliated to Japan. Japan is a strategic partner for Indonesia. In addition, Japan is Indonesia's 3rd export market, on the other hand it is also the second largest investor, especially in the infrastructure sector. The NIKKEI 225 is the main stock index in Japan, consisting of 225 of Japan's leading companies. This index is designed to reflect the Japanese market as a whole.

Hong Kong stock market was picked because it has a sophisticated stock market

that is among the top 10 largest stock markets in the world. Hong Kong is one of the major financial centers in the globe. Hong Kong provides an all encompassing and high quality financial environment to people working in the financial Industry. Due to this, it has attracted a lot of foreign market participants. Hong Kong investors frequently use the Hang Seng index as a market benchmark since it is the most regularly cited indicator of the Hong Kong economy.

Singapore stock market is one of Indonesia's closest neighbors, they have common investor groups with Indonesia stock market. Relations between Indonesia and Singapore are mostly driven by geographical proximity. In addition, Singapore is also considered as one of the centers of Asian financial activity to the Indonesian stock market. Strait Times Index used in this research because it is the main stock index in Singapore which contains a combination of the 30 largest companies on the Singapore stock market.

To analyze stock price index data for the purposes of this research we match the type of data used. The data used is time series data that has a variability (volatility) that is not constant at every point in time so that the variance/variety of the error will always change every time. Data on stock price index movements also appears to have an unequal distribution, meaning that it is not homoscedastic. This causes a heteroscedasticity condition in the time series.

To overcome the condition of heteroscedasticity in the stock price index data, it can be overcome with the ARCH model. This model is used to deal with changes in variance that are affected by a T number of random data from the previous period.

While the ARCH model does not address higher orders, it is generalized to the GARCH model.

GARCH has the same volatility response characteristics (symmetrical) to fluctuations, meaning that as long as the intensity is the same, the volatility response to a fluctuation is the same, both positive (good news) and negative (bad news) shocks. However, the financial data shows that there are differences in the magnitude of changes in volatility when there is a movement in the return value which is called the asymmetric effect.

The asymmetry that occurs can be in the form of a positive or negative correlation between the current return value and the volatility of the next period. It is said to have a negative correlation between the return value and changes in volatility, if the volatility tends to increase when returns are weak and volatility decreases when returns increase, which is called the leverage effect. This asymmetry condition can be overcome by the asymmetric GARCH which is EGARCH model. Therefore, this research will find the existence of volatility spillovers and leverage effect from the main global stock market toward Indonesia stock market before COVID-19 pandemic and during COVID-19 pandemic

1.2 Research Questions

a. Is there any transmission of volatility and leverage effect from the United States stock market to Indonesia stock market before pandemic COVID-19?
b. Is there any transmission of volatility and leverage effect from the Japan stock

market to Indonesia stock market before pandemic COVID-19?

c. Is there any transmission of volatility and leverage effect from the Hong Kong stock market to Indonesia stock market before pandemic COVID-19?
d. Is there any transmission of volatility and leverage effect from the Singapore stock market to Indonesia stock market before pandemic COVID-19?
e. Is there any transmission of volatility and leverage effect from the United States stock market to Indonesia stock market during pandemic COVID-19?
f. Is there any transmission of volatility and leverage effect from Japan stock market to Indonesia stock market during pandemic COVID-19?
g. Is there any transmission of volatility from Hong Kong and leverage effect stock market to Indonesia stock market during pandemic COVID-19?
h. Is there any transmission of volatility and leverage from Singapore stock market to Indonesia stock market during pandemic COVID-19?

1.3 Objectives of the Research

a. Find out the presence of volatility spillovers and leverage effect from United States stock markets to the Indonesian stock markets before pandemic Covid-19
b. Find out the presence of volatility spillovers and leverage effect from Japan stock markets to the Indonesian stock markets before pandemic Covid-19
c. Find out the presence of volatility spillovers and leverage effect from Hong Kong stock markets to the Indonesian stock markets before pandemic Covid-

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d. Find out the presence of volatility spillovers and leverage effect from Singapore stock markets to the Indonesian stock markets before pandemic Covid-19

e. Find out the presence of volatility spillovers and leverage effect from United States stock markets to the Indonesian stock markets during pandemic Covid-19

f. Find out the presence of volatility spillovers and leverage effect from Japan stock markets to the Indonesian stock markets during pandemic Covid-19

g. Find out the presence of volatility spillovers and leverage effect from Hong Kong stock markets to the Indonesian stock markets during pandemic Covid-19

h. Find out the presence of volatility spillovers and leverage effect from Singapore stock markets to the Indonesian stock markets during pandemic Covid-19

1.4 Contributions of the Research

a. Investors

The research's findings can give investors the knowledge they need to manage risk, choose how to allocate their assets, and create (diversify) portfolios that will yield the best profits.

b. Government

The findings of this study are anticipated to assist the government in developing policies that will help this country cope with excessive volatility brought on by adverse shocks in the stock market.

c. Academics

The findings of this study are intended to be utilized as empirical support for related studies, serving as further references for other studies that may be conducted at various times or with alternative goals, such as identifying asymmetric volatility spillovers from other stock markets.

1.5 Scope of the Research

In this research, the author trying to find out the volatility spillovers from United States, Japan, Hong Kong and Singapore stock market toward Indonesia stock market. To do this research the authors use the Composite Stock Price Index of each selected countries.

The authors use the daily data of each countries composite stock index from 1 January of 2017 until 31 December of 2021. Then the data will be divided into 2 periods, which is period before COVID-19 pandemic (1 January 2017- 31 December 2019) and during COVID-19 pandemic (1 January 2020 – 31 December 2021)

To investigate asymmetric volatility spillovers, we process the data using the Exponential Generalized Autoregressive Conditional Heteroskedastic model. Its

ability to reflect the leverage effect of volatility makes the EGARCH model stand out from other models. The leverage effect, which causes the model to be asymmetric and causes negative returns to create more variations than positive returns. When asymmetric GARCH models are used to describe volatility, the variants are given more freedom to react when prices drop as a result of negative shocks than when they rise as a result of positive shocks.

1.6 Structure of the Research

The structure of this research that will be used to deliver the process and the result of the research will be delivered in five chapters that consist of

CHAPTER I: INTRODUCTION

In introduction the researcher will explain the background of this research, statement of the problem of this research, research objective, contribution of this research, and scope of the research.

CHAPTER II: LITERATURE REVIEW

In this chapter the researcher will explain about the theory which will be used like volatility, stock market integration, volatility spillovers, and leverage effect. Then build theoretical framework of the research by using information from previous research. Then the formulation of research hypothesis and conceptual framework.

CHAPTER III: RESEARCH METHODOLOGY

In this chapter, the researcher will describe the technical implementation of the research including research design, research population and samples, data sources, data collection techniques, research variables and variable operationalization, research instruments and data analysis methods.

CHAPTER IV: RESULTS AND DISCUSSION

In this chapter, the researcher will explain the research findings obtained based on the data processing that has been done. Consists of a description of the general description of the results that have been observed and analyzed regarding the existence of volatility spillovers and leverage effect from the US, Japan, Hong Kong and Singapore stock markets on the volatility of the Indonesian stock market before and during the COVID-19 virus pandemic.

CHAPTER V: CONCLUSIONS AND SUGGESTIONS

In order to be used to future study for the benefit of everybody, this chapter includes findings and recommendations drawn from the observations and conducted research.