# CHAPTER I
# INTRODUCTION

## 1.1 Overview of the Research Object

The history of Indonesian stock market started early in 1912 when the establishment of the equity market by the Dutch colonial. It was established mainly to cater the interest of the Dutch colonial (Pengantar Pasar Modal, 2013)

In the later years of its establishment, Indonesia stock market experienced tremendous development of its number stock traded as well as the closing price of each share. The number of stock traded was doubled only in the time span of 6 years (see Table 1.1). The more interesting figure is its closing price. In the time span of 11 years, the price soared 9 times than its original price. It shows that Indonesia is rather beneficial for the investment destination.

With the typical characteristic of developing country, the price of the stock and its volatility is mainly influenced by the inflation rates (Saryal, 2007). Another characteristic of the investment in developing countries is that it mainly depends on the capital inflow (ILO Employment Strategy Papers, 2004). It means, the investment is denoted in foreign currency. This shows that the exchange rate factor also play a role in the stock market prices and its volatility.

## 1.2 Research Background

Investment is defined as the current commitment of money or other resources in the expectation of reaping future benefits (Bodie Kane & Marcus, 2009). Investment is divided into 2 types according to the sector of the investments. The first is the real investment such as land, buildings, machines or knowledge and the second type of investment is the financial investment which consists of stock and bond.

The 2008 global financial crisis and worldwide recession had halted the global expansion of global capital and banking markets that had lasted nearly three decades (Mckinsey Global Institute, 2011). However, these recent 2 years, the condition starts to recover. The total value of world's financial stock had reached USD 212 Trillion in 2010 (Mckinsey Global Institute, 2011). The emerging markets contribute the most of the recovery as the mature economy struggle more to recover.

As one of the emerging markets and also the biggest economy in the Southeast Asia, Indonesia experienced the tremendous development in their economy, despite the 2008 global financial crisis. Its economic growth on 2012 was at the level of 6.2 percent (Reuters, 2013) when the rest of the world was at the level of 2.2 percent (World Bank, 2013). So it is considerably good performance. Indonesia is attractive for the investment because its abundant natural resources and the rising of the middle class consumers (BBC News, 2013).

As the explanation of economic indicators in the previous paragraph explained, there is also a steady increase in the number of stocks traded in the Jakarta Stock Exchange (JKSE). The number of stock traded in 2006 was 924.488.804.314 (Bapepam LK, 2012) and per December 14th 2012, the number reached 2,420,880,791,060. The details is shown in the table below

Table 1.1

Number of Stocks Traded in Indonesia Stock Composite Index

Period 2006-2012

| Period | Number of Stocks |
|---|---|
| 2006 | 924.488.804.314 |
| 2007 | 1.128.173.554.108 |
| 2008 | 1.374.411.626.346 |
| 2009 | 1,465,654,987,417 |
| 2010 | 1,894,828,442,341 |
| 2011 | 2,198,133,269,765 |
| 2012* | 2,420,880,791,060 |

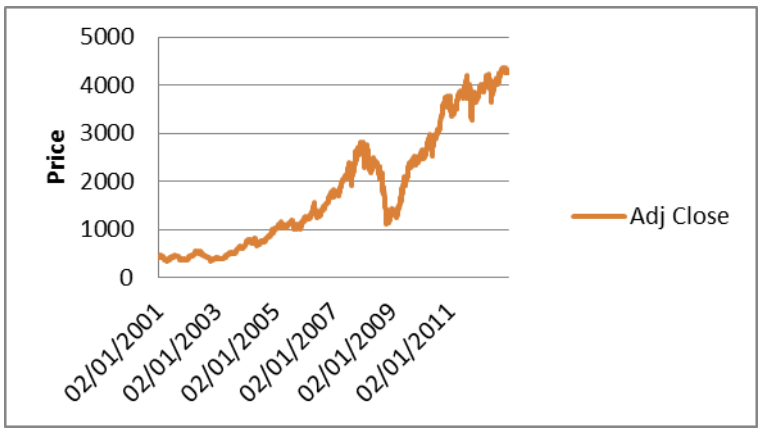
*per December 14th 2012

Source: Bapepam LK, 2012

The stock price in the composite index is also steadily increasing. In 2006, the adjusted close price of the *Indeks Harga Saham Gabungan* (IHSG) was 1.805,52 until very recently on December 14th 2012 the price was 4,308.86; almost tripled in the time span of 6 years.

Figure 1.1

IHSG Price from 2001-2012




Source: Yahoo! Finance (Downloaded on March 13 2013)

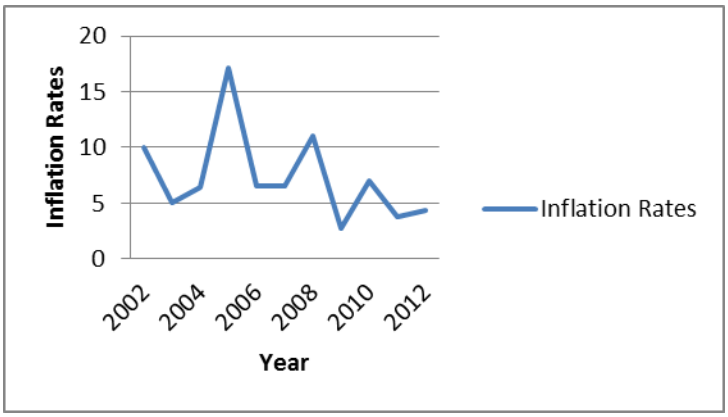
The graph above is illustrating the price trend of Indonesian stock market prices from 2001 until 2012. In the time span of 11 years, the price of the Indonesian stock market doubled almost 9 times with the trend of "always increase" except in 2008-2009 when the world was stung by the global financial crisis.

As one type of an investment, stock is also associated with risk. The higher the risk, the higher the expected return from the investment. Risk is divided into two types, according to whether or not the risk could be diversified. The first type of the risk is the firm specific risk. This risk is related to the internal factor of the organization. Thus, it could be avoided by diversify the investment into the less risky investment. The second risk is the market risk. Market risk is the external forces that might defy the return of an investment. Market risk is called non diversifiable risk because it is unlikely to be avoided or minimize. Several examples of non-diversifiable risk is political risk and economic risk (Keown et all, 2008:193). In this research, the type of the risk that is going to be researched is the inflation rates and US Dollar exchange rate as the part of non-diversifiable economic risk. Several researches had already narrowed down the scope of Economic risk. The initial research was done by David Morelli in 2002. He used industrial production, real retail sales, money supply, inflation, and exchange rate as the macroeconomic indicators (Morelli, 2002). However in 2010, Yaya and Shittu argued that the relevant economic indicators to be assessed in developing country are the inflation rates and exchange rates (Yaya and Shittu, 2010).

Inflation is defined as the rise of price in a general level (Bodie et al, 2013). It is where the demand for product and services are exceeding the productive capacity. Inflation is an important factor to

determine the stock price volatility, as it is the part of the calculation of real interest rates. Real interest rate is the adjusted inflation nominal interest rate. The higher the real interest rates; reducing the present value of future cash flow, thereby is not attractive for the investment.

Figure 1.2
The Inflation Rates of Indonesia
2002-2012




Source: Badan Pusat Statistik (Downloaded on September 18 2013)

The graph above illustrates the inflation rate in the period of 2002-2012. The inflation rates reached its peak on November 2005 with the number of 17.11 percent. The soaring inflation rates was caused by the rising oil prices (BBC News, 2005). It then declined for the next 3 years until the global financial crisis hit the world economy, making the inflation rates rose again to the number of 11.06 percent in November 2008. After the global financial crisis, the inflation rates tend to decrease within 3 years, given the inflation rates on December 2012 on the number of 4.30 percent.

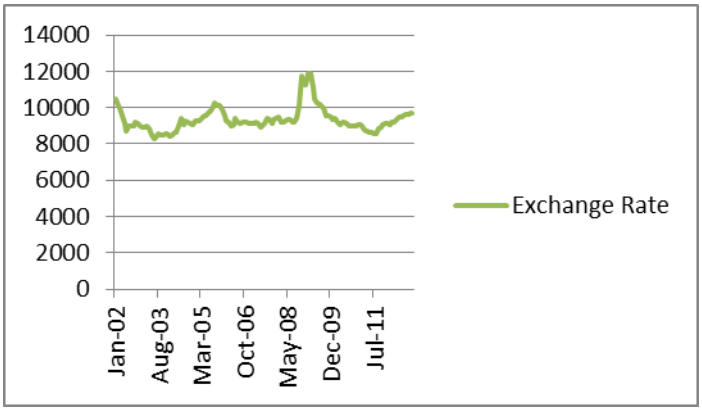
Inflation rates behave differently across the country towards the volatility of stock market prices. In developing country, where inflation rate is usually quite high, it has significant effect on the stock market volatility, such as in Turkey (Saryal, 2007). The finding is supported by the evidence in Nigeria, showing that inflation has significant effect on stock market volatility (Yaya and Shittu, 2010). However, it behaves differently in developed country; Canada where inflation shows negative impact on stock market volatility (Saryal, 2007)

Exchange rate is also an important determinant of the stock market price volatility. Consider the investment also come from outside the country, exchange rate is critical to the attractiveness of the investment. US Dollar is among the most tradable currencies in the world along with Euro, Australian Dollar, Japanese Yen and Swiss Franc etc., called *the Majors*.

Figure 1.3

Exchange Rate of Rupiah per US Dollar

Period 2002-2012




Source: Bank Indonesia (Downloaded on March 13 2013)

The exchange rate of Rupiah towards US Dollar on average is on the value of Rp 9.336 per US Dollar on the time span of 2002-2012. However, it experienced it highest peak during the 2008 global financial crisis. The highest exchange rate value of Rupiah per US Dollar was Rp 11.912 on February 2009, that could be said, was still affected by the global crisis. In the following years after its highest peak, Rupiah started to appreciate to the value of Rp 8.599 per US Dollar and fluctuate in the value around Rp 9.000-10.000 in the following years to date (December 2012).

Based on the description that has been explained above, the author wants to conduct a research to observe the impact between inflation rates and exchange rate on the Indonesian stock market volatility. As it is judged, Indonesia is a developing country with rather moderate inflation rates. The higher the inflation rates mean the lower real return of the investment. If the real rate of return of the investment tends to be lower, it would not be attractive for the investor to actually purchase certain shares in the market, so the prices would eventually drop. The same impact is also causes by the exchange rate. Assuming the investment comes from abroad, which mainly denoted in US Dollar, appreciation of the local currency against foreign currency would eventually drop the stock price since it would be less attractive for the investor because their currency buy less local currency.

The research objects that is used for this research is the inflation rates data, Rupiah exchange rate towards US Dollar and IHSG price during the period of 2002-2012.

There are several researches on the impact of inflation rates and exchange rates on stock market price volatility that had previously conducted. The first research conducted by Saryal (2007), examining the relation between inflation and conditional stock market prices in Turkey and Canada. The result in Turkey shows that the inflation has a high predictive power over the stock market prices whereas in

contrast, it is weaker predictor in Canada, although it still significant. The second research conducted by Yaya and Shittu (2010) analyzed the impact of inflation rates and exchange rate towards the stock market volatility in Nigeria. Result from this research showed that inflation and exchange rates have significant impact on the stock market return volatility.

This research is conducted because the author is curious whether or not foreign exchange rate and inflation rates have a big impact on the Indonesian stock market prices. The stock prices reached all-time high at the level of 4.848 on Thursday, March 7$^{th}$ 2013 (Kompas.com, 2013). However, the following day after it reached its all-time high, it was predicted that the trend of the prices was mixed and had the tendency to decline. If we see in a wider time series, the trend of the stock prices is actually rising, starting after the 2008 global financial crisis. In fact, the inflation rate of the country is not stable and in some extents, it had the rising trend and so is the exchange rate of US Dollar. Hence, the author wants to find the relation between inflation rates and exchange rate towards the volatility of Indonesian stock market prices.

In the econometrics methodology for forecasting, there are several methods that usually used. The two models that is widely used are autoregressive integrated moving average (ARIMA) or popularly known as Box Jenkins methodology and vector autoregressive (VAR). However, as the object of this research is the stock market price volatility, there is a phenomenon called volatility clustering; in which exhibited a wide swings for an extended time period followed by a period of comparative tranquility (Gujarati et al, 2009). The model that could capture volatility clustering in the time series, assuming linearity, is called generalized autoregressive conditional heteroscedasticity (GARCH) proposed by Bollerslev (1986).

Based on the background above, the author is encouraged to conduct a research with the title, **"*The Impact of Inflation Rates and US Dollar Exchange Rate towards Indonesian Stock Market Return Volatility on the year 2002-2012, using GARCH Methodology.*"**

## 1.3 Problems Formulation

Based on the research background, the author tries to conduct a research to analyze the impact and relation between inflation rates and US Dollar exchange rate towards the volatility of Indonesian stock market. Besides that, problems arise in this research as well, which are:

1. Do inflation rates and US Dollar exchange rates influence the volatility of Indonesian stock market return?
2. How is the impact of inflation rates and US Dollar exchange rate on the volatility of Indonesian stock market return?

## 1.4 Research Objectives

According to the problems above, the author was conducting a research which intends to:

1. Analyze the impact of inflation rate and US Dollar exchange on Indonesian stock market volatility
2. Determine the impact between the objects (inflation rates, US Dollar exchange rate and Indonesian stock market volatility)

## 1.5 Research Benefits

The benefits that are expected from this research are:

1. The result of this research is expected to give source of information to the stakeholder involved.
2. For the investor, it is expected that the result of this research would give proper information towards the stock market volatility, thus could be able to choose for the good investment.
3. For the academician, the author hopes that this research could become an additional literature sources for the future research.

## 1.6 Writing Structure

In order to be systematical, the writing structure is arranged to provide a brief overview regarding the research conducted. The following structures are:

CHAPTER I INTRODUCTION

This chapter contains a brief review of the research background, problem formulation, research benefits and the research objectives.

CHAPTER II THEORETICAL BASIS

This chapter contains the literature study to describe the theory and the tools used in the research.

CHAPTER III RESEARCH METHODOLOGY

This chapter contains the type of research conducted, sample and population, scope of the research, objects of the research, data of the research and steps conducting the research.

CHAPTER IV RESULT AND ANALYSIS

This chapter contains the result of the model and its analysis.

CHAPTER V CONCLUSION AND SUGGESTION

This chapter contains the conclusions of the research and suggestion for a better research in the future.