

CHAPTER II

THEORETICAL FRAMEWORK

2.1. Theoretical Background

This chapter will discuss and review the theoretical concept that would be used as the basic ideas in this research. This discussion would be a guide to help understand and give insight to solved the problem in this research. Looking through the importance of the nature of the stock, it is important to understand how the behavior of stock in a country itself and how the global economic changes affect it, there are several studies that has been conducted by the researchers that examining stock markets during economic crisis. Focusing on three main key variables to understand the connection between economic cycles and stock return volatility there are consist of stock return volatility, risk premium, also information asymmetry.

2.1.1. US and Asian market

US market is well known as the biggest market and the changes that happened in this market will surely affected the other countries whether it is direct or indirect and that's the reason why the integration or interrelationship of the biggest market and other markets should be conducted. Meanwhile despite the biggest market, there's also market that keep growing which is the East Asian market. East Asian countries have reaches certain dynamic growth with the high levels of investment and savings, this countries has attracted the corporates attention and also the western

investors. From the western point of view, east Asian countries are seen as the potential source of funds and investor sees this as a good opportunity to make their international portfolio in order to spread or minimized the risk in their portfolio. That's why it would be interesting to analyze the behavior of the Asian markets and how does these markets react toward the global economic events. (Swaha, 1993)

2.1.2. Global Economic Events

With the globalization and the development in the technology, capital markets of each country are closely interconnected to one another. As a result of global economic events many countries were affected whether it is direct or indirect way. Some countries will become unstable and suffer from the events and that's the reason why the effect of the global economic events that happened need to be analyzed by the researchers. Lukanima and Swaray have provided the periodical sampling of each global economic event that has happened even since 1990, which shows in the table below.

Table 2.1**Periodical Sampling of Global Economic Events since 1990**

Global Economic Events	Description of Economic Condition
Pre Asian Financial Crisis (02/02/1990 – 01/07/1997)	The period of prelude to the 1997 crisis
The Asian Financial Crisis (02/01/1997 – 30/03/1999)	The beginning crisis in Thailand of Thai Baht financial collapse followed by the Thai government decision.
The Post Asian Economic Crisis (01/04/1999 – 31/12/2002)	The economic recovery where by the end of 2002, countries that were affected by the Asian Financial Crisis had slowly recover.
The Global Economic Boom (02/01-2003 – 31/07/2007)	Economic boom resulted from four major factors consist of high commodity prices, booming international trade, exceptional financing conditions, and high levels of remittances.
The pre Global Financial Crisis (01/08/2007 – 16/03/2008)	The beginning of the U.S. crisis which reverse the global economic boom condition
The Global Financial Crisis (17/03/2008 – 31/03/2009)	US Investment Bank collapsed resulted to the Global Financial Crisis.
The Post Crisis: Economic Recovery (01/04/2009 – 30/04/2010)	The recovery period which shown by the improvement of the stock performance
The Greece Debt Crisis (01/05/2010 – 15/12/2011)	Greek governments have been consistently and deliberately misreported the country's economic statistics and this resulted to the fear from the market.
Post Crisis Period: Greece Crisis (16/12/2011 – 31/06/2014)	The “road to recovery” where many public companies started to recover.

Source: Lukanima and Swaray (2013: 56); Stunda (2014:43)

2.1.3. Stock Return Volatility

Stock price volatility received great attention for investors and it is important aspect that need to be understand before deciding to invest money in the market. There are several research that has been conducted regarding the

behaviour of the stock return volatility (Urooj et al, 2009; Mishra and Rahman, 2010).

Urooj et al. (2009) in their research, they examine the stock volatility of KSE 100/ Karachi stock exchange from period November 1992 to January 2008. By using ARCH/GARCH model, the researcher has found that KSE 100 has volatility clustering, leptokurtosis and asymmetry and they found that there's pattern existed in the stock price returns in this market.

Mishra and Rahman (2010) analyzed the dynamics of stock return volatility on India and Japan. They implement the TGARCH-M model in their research. Based on their research they found that the Japan stock market is more efficient compared to India. They also found the evidence of the effect of asymmetric information in both countries, it shown by how India's market is affected by the good news, meanwhile Japan is more influenced to the bad news.

2.1.4. Risk Premium

Risk premium is one of the great interest that need to be considered by the investor as their bear the risk from the market.

Dictionary of Financial And Business Terms defined risk premium as “the reward for holding the risky market portfolio rather than the risk-free asset. The spread between Treasury and non-Treasury bonds of comparable maturity.” (p.124)

With the global crisis that has happened, it gives significant impact toward the market especially it effects the risk and return of the market. Several research has been conducted to understand how the global crisis able to affect the risk premium of the market. One of the research by Bishop et al. (2011) found the link between increases in the market risk toward the decreases in equity values. In their studies, they suggest to adjust the market risk premium to reflect the global financial crisis with the use of historical average MRP or forward looking risk premium which used to estimate the cost of equity. Using this methodology, they would expect a view of forward cost of equity which is consistent with the current condition of the market and with the debt spreads.

On the other hand, the study by Hall (2012) that responses toward the previous study point out the inconsistency of the adjustment of risk premium to reflect the global financial crisis by Bishop et al. (2011). In his paper, he underlying the fundamental inconsistency with its measurement problems especially between the short term and long term MRP. But still this kind of issues are still being debatable until these days and more research should be conducted to help investor and give broaden knowledge in the financial studies in the future.

2.1.5. Information Asymmetry

According to Kolb and Rodriguez's (1992) book of Financial Management, information asymmetry or asymmetric information is the situation in which investor has the same information regarding the firm, in which not every information they get

are the same or condition where two parties possess information about same subject and the information itself has different value.

This information asymmetry appears anywhere and has been conducted by many researchers. One of the examples is shown by Chang (2003) who analyzes the barriers to information flow in which examined the information asymmetry happened in emerging market by studying and comparing between foreign and expatriate analysts. The researcher uses the daily data of stock price of TSE or Taiwan Stock Exchange and also listed companies data. In this research, it was underlined that the expatriates' trade on their superior information, while foreign does not trade on their information, but by having expatriate recommendations. The result of this research shows that the expatriate analysts outperform foreign on the profitability of portfolios.

2.1.6. Co-integration

Globalization has resulted to the closely interconnection of each countries and it easily influence the economic condition of each countries with this basic, the co-integration test has been conducted by many researchers in order to examine the long run relationship among selected variables. The relationship among stock markets also has been examined by many researchers and their result remain controversial. Zerren and Koc (2013) analyzed the integration between Turkey stock markets and G8 countries consist of US, UK, Japan, France, Germany and Canada. In their research they found the cointegration of Turkey and these countries in long term relation. By

conducted the co-integration test it will influence the investor decision in making their portfolio especially in order to decrease the risk of their portfolio.

Recent study by Sum (2013) also conducted the co-integration test between United States and Europe and in his research, with the changes that happened in the structural policy of one country it can give a direct or indirect effect toward the others that's why by taking this into consideration, Sum also put the economic policy uncertainty that has happened in the countries into account . The research has found the long run interconnections in economic policy uncertainty by looking through the economic conditions between US and European countries.

Royfaizal et al. (2009) investigated the international linkages or relationship between ASEAN and US stock markets. In this research, the sample of ASEAN countries used mainly are Malaysia, Singapore, Philippines, Thailand, Indonesia, China, Japan, and Korea. All of these countries are thoroughly investigated its relation with US markets since the ASIAN financial crisis. Using the co-integration test, they come into conclusion that there's no significant co-integration among ASEAN and US markets on pre-crisis period, meanwhile during crisis and post-crisis period there's long run relationship in those stock markets between those countries.

Kassim (2012) investigated the nature of stock market integration by examining Malaysian stock market with two biggest stock markets which are US and Japan's stock market. By conducted the co-integration tests which able to examine the existence of long-run relationship among variables. The research findings shows the nature of integration among Malaysian stock market with US also Japan changes

over period of crisis that's why this study proof the country's vulnerability toward the financial shocks.

Dobano (2013) tried to analyze the causal relationship between fluctuations in Latin American stock market after financial crisis using Granger Causality test. This research investigates the short run and long run relationship by see the possibilities of difference in returns. From this research it shows that there's actually no significant difference in mean returns. And from the evidence of short run and long run performance, it reflect that in the short run, among international indices there's bidirectional causality, but this is not the case with the emerging stock indices with international stock indices. Meanwhile in the long run, there's co-integration between Latin American Indices and international indices which means that one index can be used to predict other indices.

Kenani et al. (2013) investigate the impact of the Global Financial Crisis on 2008 toward the Integration of the Chinese and Indonesian stock markets by considering also the volatility spillovers effects of Japan and U.S. This research is using EGARCH model considering the importance to capture the leverage effects or the asymmetric response in the stock market volatility. From the investigation that has been conducted, it's been concluded that current stock market volatility in the Japan and the U.S. markets have effects on the future volatility of Indonesian stock market before the financial crisis.

2.2. Literature Review

Economic studies have investigated the nature of the stock indices and its relationship of stock returns toward the volatility. These studies are focusing on the condition of the market during the crisis (Kravets and Sytchenko, 2013; Shin, 2005; Pivac, Aljinovic, and Marasovic, 2010; Rjoub and Azzam, 2012; Hsu, Huang, and Ntoko, 2013; Lee and Jeong, 2014), several studies also included some variables that need to be considered consist of IT revolution (Takemori and Wada, 2003), stock trading volume, exchange rate, interest rate, international stock price index, bond trading volume, interest rate (Sabri, 2004), negative news or asymmetric information (Casarin and Squizzoni, 2013).

Kravets and Sytchenko (2013) examined the nature and characteristics of stock indices, they used the wavelet analysis and SSA method which also considers local individual features from period of 2007 to mid 2012. By using wavelet analysis, it helped the research to describe the effect of crisis on time peculiarities and volatility. Based on their analysis, they found that fluctuations of stock indices and stock returns are a reliable indicators of macroeconomic realities. There are differences of stock returns behaviour during crisis and relaxation periods around the world, there are deep recession in Europe in early 2012 and also slow growth of major developing countries such as Brazil, India, Russia, South Africa, and Turkey. While emerging countries are having vulnerable condition compared to the beginning of the last crisis.

Shin (2005) has been proven the relationship between expected stock returns and volatility. He investigated the condition of 14 emerging international stock markets consist of 6 Latin American, 6 Asian, and 2 European markets. This study based on research of daily data which converted into weekly observations from January 1989 – May 2003. Using parametric and semi-parametric GARCH, Shin comes to conclusion that there are positive relationship between expected stock returns and conditional volatility but insignificant in most countries.

Pivac et al. (2010) investigated the financial crisis consist of pre-crisis within period from January 2006 to August 2008 and response on actual global financial crisis within the Lehman shock period in September 2008. The study focus on the condition of developed stock markets which consist of Japan, American and German stock markets. To analyze the stock market risk and return, Pivac et al. are using modern (Markowitz's) portfolio theory. The range of expected return in pre-crisis falls from positive values to the negative values in crisis period. While American and German stock market are similar, there values rises in crisis period.

Rjoub and Azzam (2012) analyze the stock returns and volatility in emerging markets. The study was done based on data from 1st January 1992 to 2nd July 2009 using closing prices data of various sectors such as banks, insurance, services and industrial sectors in which covers from local events to regional, even global events. By using GARCH-M model, the result shows that crisis give negative impact on stock returns and the severe impact are happened from crash of 2008 it was proven by the largest decline in stock prices and high volatilities.

Hsu et al. (2013) examined the foreign investment impact in emerging stock markets using GARCH model. This research divide the result between foreign investor's most favored and least favored stocks. Using TWSE daily data, from period of November 2007 to December 2012, they found that most favored stocks has lower VaR than the least favored stocks and from the most favored stock, if there's high expected maximum losses, when extreme economic events happened, investors might have high or suffer loss.

In recent studies of Lee and Jeong (2014) they have been investigate the financial crisis from 2000 to 2012 and how this crisis effect on stock market. This research using DCC-MGARCH method, also risk decomposition, GVAR, and CCOR models. This study also focus on the case of Northeast Asia and Europe and they found that Northeast Asian stock market is independent from European and global market movement, European market's level of integration with Northeast Asian stock market has rise although it's economically insignificant, and the least is the findings that theEuropean and global stock market level of integration were temporary rise during the financial crisis.

Looking through this studies that has been conducted, it has been proven and suggested that the global financial crisis really has been able to influence the behavior of the stock. Apart from the influence of the global crisis itself, there are also several studies which includes some variables in their studies. From the studies that has been conducted by Takemori and Wada (2003) which compared the performance of stock markets before and after the East Asian currency crisis. The study draws on lessons

they learned from the Korean and Japan stock markets. Based on the research they conducted, there was sharper decline happened on Korean stock but this country also recover faster while Japan market didn't recover quickly. This condition was resulted from the IT revolution in which this two countries act in different ways.

Sabri (2004) identified the stock return volatility and market crisis in emerging economies consist of five countries including Mexico, Korea, South Africa, Turkey, and Malaysia. This research covered investigation during period of 1997 to 2000. This research found that both local and international factors can effect the price volatility in emerging markets. From the research that has been conducted it revealed that stock trading volume and exchange rate are the variables that has the highest correlation toward the changes of emerging market's stock price. And each factors such as interest rate, international stock price index, bond trading volume, interest rate give varied impact toward stock price volatility. And from all these factors that has been mentioned, Meanwhile it was revealed that inflation rate is the least positive correlation to the stock price volatility.

Casarin and Squzzoni (2013) investigated the relationship of negative news with stock market volatility. This research focus on investigating the 2008 – 2009 crisis period. In this research, they found the importance of press media as they can give influence at how investor view the crisis. Investor would move their money, investment according to the major media reported and this kind of action would give implication toward their, mood, investment decision, debate on politics of economic

measurement, etc. This kind of issue shows the importance of reliable, competent information and also the responsibility and ethics of financial press.

2.3. Hypothesis Development

Based on these theoretical basis and looking through the previous study of stock return volatility and economic cycles that has been conducted, the author develop hypothesis that would like to be analyse which consist of Hypothesis 1 to Hypothesis 4, there are;

H1: If there's good economic condition, then stock return increases.

Hypothesis 1 proposes the positive correlation between economic condition and stock return. It is based on the literature and deductive reasoning. The economic condition is distinct by the news. One of the researches that support this hypothesis is based on the research of Djamil et al. (2013) found that stock returns are mostly determined by external factors that were consist of inflation, exchange rate, socio-economic conditions, etc. Basically the good economic condition appear in correspondence from recovery after the crisis condition, economic booms or expansions. The measurement of good economic condition in this research, will be using the GDP growth, as explained by Mankiw's (2008) book of Principles of Economics, the best measure of economic well being is by evaluating the GDP. With the economic grows too fast or too slow, it will give bad effect such as recession or

inflation. According to economist, the ideal GDP growth rate would be around 2%-3%. Using the GDP growth rate as the measurement of economic condition, in this research will try to determine how does economic condition will relate or effect the stock return.

H2: If there's good economic condition, then the risk premium decreases.

Hypothesis 2 employs the relationship between economic condition and the risk premium (trade off between risk and return). To analyze the risk premium in this research is by looking at the difference between the market rate and the risk free rate ($R_m - R_f$). There are several conditions regarding risk premium, several research found the increases in risk premium during bad times but not all of the market experience the same, considering each countries has it's own economic condition. This hypothesis is supported from research conducted by Mendonca and Nunes (2011) in their research of Brazilian economic experience, which come to conclusion from their research that good economic condition, with stabilizes public debt and GDP ration resulted to the low risk premium.

H3: Bad news (information asymmetry) increases the volatility of stock return.

Hypothesis 3 proposes negative autocorrelation between information asymmetry and return volatility. It is based on the proposition of the importance of information that would give implication toward investor in making decision. Hypothesis 3 was based on Chiang et al. (2007) who conduct research on five stock

markets. In their research, they found that negative news will cause decline in national stock returns. In which it explained that when bad news hit the markets, the stock return become more volatile and persistent. Volatility of the stock would be determined by examining the standard deviation of each country.

H4: There is co-integration between US market and four Asia markets during financial crisis.

Hypothesis 4 proposes the co-integration between US market and Asia markets. This hypothesis was supported by the research that has been conducted by Royfaizal et al. (2009). Although in each period shows different result in which there's no co-integration on pre-crisis period and yet they also found that there are relationship among markets during crisis period and post-crisis period.

To support the hypothesis, the main focus of the research will be to analyze financial crisis that happened since 1997 to first quarter of 2014 was classified by Lukanima and Swaray (2013); Stunda which consist of eight periods there are; The Asian Financial Crisis, The Post Asian Economic Crisis, The Global Economic Boom, The Pre-Global Financial Crisis, The Global Financial Crisis, The Post Crisis of Economic Recovery, The Greece Debt Crisis, and Post Crisis Period of Greece Crisis.