CHAPTER 1

INTRODUCTION

1.1 Background of the study

Stock market volatility has received much attention as evidenced by the vast amount of literature by academicians and practitioners. Today a portfolio manager must be aware of the likelihood that his portfolio will decline in the future. Past volatility can be used to predict future volatility and this is an important input for making investment decisions on and selecting portfolio.

Local stock market volatility certainly has implications for financial and economic activities in Malaysia. Furthermore, the dynamics of major world stock markets can also have ramifications on the Malaysian market (Thangavelu, 2009). Many researchers have studied the movement of aggregate stock market volatility. Generally, studies on volatility in the United States, Japan and Europe dominate the literature. However, in Malaysia little research has been done on volatility due to the fact that Bursa Malaysia is relatively young.

For stock and bond market investors, trends from historical data would be useful to strategise asset allocation for the best possible returns while limiting risk exposure to investors. Stock market investors are obviously interested in the volatility of prices, for high volatility could mean huge losses or gains and hence

greater uncertainty. In volatile markets it is difficult for companies to raise capital. Volatility of returns in financial markets could be a major stumbling block to attract investment (Mala and Reddy, 2007).

Volatility can be used as a quantitative representative of risk but it should be noted that volatility is not equal to risk. There have been numerous studies and much research conducted to identify risks and risk factors in stock markets. One of the generalized risk factors studied was the volatility of the stock market. This volatility has been used as a measure of risk which could aid investors in strategising allocations of their resources.

The predictability of volatility could be used to hedge risk. Thus, measuring volatility is of paramount importance in the literature of financial economics and econometric. Portfolio managers and policy makers in emerging markets can evaluate and hedge against risk or price derivatives based on volatility measures to know typical benefits and costs associated with their policies so as to make a harmonious arbitrage between financial deregulation and regulation (Nguyen, 2005).

Volatility can also be used to deduce the fair value of an asset. In modern option price theory, Black-Scholes used the volatility of an asset to determine the fair value of an option asset.

For financial institutions, risk management had become a compulsory procedure, and a key role has been assigned to past and future volatilities. For public policy makers, volatility has received great attention since market stability is one of their main concerns. These developments call for a very clear understanding of volatility so that the best financial decisions can be made. Hence, a portfolio manager might want to sell a stock or a portfolio before it becomes too volatile or might want to diversify his holding when the future looked like it was becoming volatile.

This project paper aims to provide an analysis of the volatility of FBMKLCI (Bursa Malaysia Composite Index) and all its sectors i.e. construction, consumer, finance, industrial, industrial production, mining, plantation, property, service and technology.

There have been some studies done on the volatility of the Bursa Malaysia composite index but there have been very few done on the volatility of sectorial indices. Thus, it is hoped that this project paper will prove to be a useful addition to the existing literature on the volatility of the Malaysian equity market.

Today, there are many varieties of instruments used to study volatility but it is difficult to identify the superior model. The most frequently used techniques in previous studies were the GARCH model series. In this project paper, the

simplest GARCH(1,1) series have been used to analyse the volatility of Bursa Malaysia main and sector indices.

1.2 Statement of the Research Problem

Many studies have been done on the levels of volatility of equity markets, mostly in the western and developed nations. The importance of volatility as a component of risk measure has pushed many developing markets to analyse the performance of their exchanges to seek ways to improve their performance. In Malaysia, studies on equity market volatility have been far less than those in western or developed countries but lately these appear to be increasing. In the public domain not many studies on Malaysian market are available. Some studies were done on Malaysian market together with markets in different part of the world. Shamiri, Isa and Hassan (2008) only identified the most suitable volatility model and distribution specifications for KLCI. Shamiri and Isa (2009) only recognised EGARCH as a better model compared to NAGARCH for estimating KLCI future return with student–t distribution. Zaharim, Zahid, Zainol, Mohamed and Sopian (2009) found that GARCH model could be used to model KLCI with fair results. They also found volatility clustering effect in KLCI return data during certain periods. Shamiri and Isa (2009) found the existence of leverage effect in the KLCI time series. Overall, the number of studies and the focus of studies confirm that there are gaps in literature, especially on the levels of volatility in developing and fast developing economies such as Malaysia. This study will help to increase the knowledge on the levels of volatility in the

Malaysian stock market, Bursa Malaysia. An understanding of levels of volatilities within Bursa Malaysia will help investors and fund managers to identify opportunities for portfolio diversification. To address the objectives of this research, this study focuses on the question: 'How does volatility change over time at Bursa Malaysia?'

1.3 Objectives of the study

The intention of this study is to analyse the volatility of the Bursa Malaysia stock market returns. A handful of studies conducted by academics and researchers have already been conducted on Bursa Malaysia. This study will validate the results of some of those published studies. Thus, the objectives of this study are as follows:

- To investigate how the Bursa Malaysia indices behaved during a specified period (2000 and 2010).

- To determine and quantify the volatility factor using the ARCH and GARCH framework analysis.

1.4 Scope of the study

This study focuses on the volatility of the return on Bursa Malaysia indices. This is done by analyzing indices that are representative of Bursa Malaysia. A key

index representing Bursa Malaysia, the FBMKLCI index has been selected for this study. To drill down the investigation deeper, analyses of the different sectors on Bursa Malaysia were carried out. The data for this study was obtained from the Bloomberg datastream available from computer terminals located at UMGSB and at the university's main campus. Daily closing data from 2000 to 2010 was used for analyses.

1.5 Significance of the study

Every nation's economic activity and development is directly impacted by volatility in its stock market. Since 1990, global economic development has moved towards liberalisation, internationalisation and in some cases localisation. Practitioners and academics have paid considerable attention to volatility as evidenced by the many published articles and working papers on volatility forecasting based on past volatilities.

The modelling of stock market volatility in forecasting aspects of future returns can be used in risk management, derivative pricing and hedging, market making, portfolio selection and many other financial activities (Merville and Pieptea, 1989).

Similar to the earlier studies, the importance of this research was to make observations about the volatility of the Bursa Malaysia Indices. These observations could then be used to predict future movements of the Bursa

Malaysia Indices. The results of this study aim to provide some indication of trends in the behaviour of stock markets. A volatility model must be able to forecast volatility and this is a central requirement in almost all financial applications (Engle and Patton, 2001).

Furthermore, as few researches have been done on Bursa Malaysia volatility, this study will provide an additional resource for future reference. It should also be noted that not all studies done on Bursa Malaysia have used sophisticated software that is now available in the market, for example, Eviews, used in this study, can implement the ARCH and the GARCH model analysis. Investors and fund managers will therefore find the analysis and conclusions in this study useful in providing some key attributes to formulate asset allocation and management. Volatility can be used to develop implied indices that will be useful to predict future volatility (Nishina, Maghrebi & Kim, 2009). Khedhiri and Muhammad (2008) identified that the volatility was required as an input in asset management by portfolio managers and investors.