UNIVERSITI TEKNOLOGI MARA

ESTIMATING AND FORECASTING VALUE-at-RISK AND EXPECTED SHORTFALL: A BACKSTORY OF MALAYSIA STOCK MARKET DURING GLOBAL FINANCIAL CRISIS

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ABSTRACT

A myriad of factors leading to the calamity of the financial crisis have been widely examined. Yet, past studies merely focused on the major causes while ignoring risk mismanagement - another important aspect which could be detrimental in certain circumstances. This study driven by the latest intention of Basel Committee to replace the application of VaR to ES due to the failure of VaR during the financial crisis. We examine the performance of VaR and ES by using various methods during calm and stormy period in Malaysia stock market. 24 daily return series from TOP30 FTSE Bursa Malaysia KLCI were collected spanning from January 2007 to June 2009 covering the stormy period of crisis, as well as from July 2010 to December 2016 covering the calm period. Our findings suggest that the application of VaR is still relevant and superior to ES in Malaysia stock market with the higher confidence level which is 99% is more preferable to be used. Additionally, we also found that VaR is very accurate during calm period by using HS and GARCH with normal distribution while FHS is more suitable on the calculation of ES. Furthermore, the chaotic market condition during financial crisis made the prediction become less accurate.

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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Risk could be an impeccable blessing or curse in life. Generally, one could understand that risk is all about the gap between real expectation and the unexpected event that could cause a great loss. As a matter of fact, risk also very prominent in the financial term. Hull (1990) described risk as the intersection point between objective probability and subjective probability. The former interpretation states that the probability is actual and can be estimated and discovered through logical reasoning and the formulation of statistical analysis. Meanwhile the latter interpretation describes the probability as very subjective and based on human's beliefs and the uncertainty is characterized by the individuals. In a more recent studies done by Vose (2008) and Gregoriou, Hoppe and Wehn (2010), risk is described as the volatility of unanticipated outcomes represented by the value of assets, earnings and equity.

Generally, there are several types of risks namely the business risk, economic risk, investment risk, financial risk, safety risk, social risk, military risk, political risk among others. Firms are mainly exposed to two major types of risk which are business risk and financial risk. Business risks are the risks consumed by the firm willingly to create a competitive advantage that can increase the shareholders' value (Jorion, 2007). Business risk is the meeting point between business decisions made by the firms and the business environment that could affect the operations of the firm. Business decisions are made mainly on product development choices, marketing strategies, the choice of the company's organizational structure, investment decision etc. Meanwhile business environment related to all external factors that could affect the firms such as macroeconomics risk and competition among rivalry.

Financial risks are associated with the possible losses pertaining to the financial market activities that derive from the defaults on financial obligations or the volatility of interest and inflation rate. Financial risk can be categorized into three components such as credit risk, operational risk and market risk. Credit risk derives from the losses related with the default in payment. Operational risk is associated with operational failures. Meanwhile market risk which is to be highlighted in this study