Efficiency and Volatility Dynamics of Bangladesh's Stock Market:

A Macroeconometric Analysis

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By

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This book is dedicated to my precious parents

Md Abdul Khaleque Molla

and

Fatema-Tuj-Zohra

for their constant support, attention, and inspiration to achieve my dreams.

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PREFACE AND ABSTRACT

The book is a metamorphosis of my PhD dissertation that I defended in November 2015 and is subjected to many limitations. However, serious endeavours are made to examine popular empirical finance issues, including an emerging stock market's efficiency and volatility dynamics. Efficiency and volatility have been the most active and thriving areas of research in time series econometrics and finance in the past few decades. The rising importance of stock market globalisation has increased interest in emerging markets. One such emerging market is Bangladesh, where stock market size and liquidity are significant issues despite the country having sustained an impressive track record of growth and development. The stock market of Bangladesh is of particular interest given that it has remarkably progressed, accompanied by the overall economy, since the liberalisation process in the early 1990s. This book contributes to empirical finance by comprehensively analysing the Bangladesh stock market using modern econometric techniques.

Given that this research involves studying the efficiency and volatility dynamics of the Bangladesh stock market, it is essential and meaningful to present some relevant aspects of the Bangladesh economy, its stock markets, and the changes that have occurred within them since the country became independent. For that reason, this book first states some facts on the performance of the Bangladesh economy and presents a historical review of the development stages of the Bangladesh stock market. After independence in 1971, Bangladesh was labelled as a "bottomless basket". In 1976, Just Faaland and John Richard Parkinson summarised Bangladesh's trauma in the phrase "test case for development", arguing, "If development could be made successful in Bangladesh, there can be little doubt that it could be made to succeed anywhere else". Bangladesh has taken about two decades to disprove the statements, as she witnessed decades of slow economic growth until the 1990s. While Bangladesh moved into the process of globalisation, it has accelerated economic growth and poverty reduction. Bangladesh is the 31st largest economy in the world regarding purchasing power parity, is recognised as an emerging economy, and is frequently captured by reputed international organisations and media. In the initial stages before 1991, the Bangladesh stock market remained informal and primitive. The development of the stock market in Bangladesh at this stage has suffered the most from political indecision regarding its strategic importance for the economy of Bangladesh. The stock market of Bangladesh has started taking a healthy shape through the free-market policy adopted by the restored democratic government in 1991 as they decided that there was a long way to go and there was no scope for financial development except an active capital market. The stock markets of Bangladesh have gotten pace in the established and modernised stage (1991-present) despite two market crashes.

A statistical review of the performance of the stock market from 1991 to 2012 and the status of the Dhaka Stock Exchange (DSE) from the world stock market perspective are also examined in this book. The market needs more product diversity, mass awareness, and international standards of governance. The Stock market indicators like market size and market liquidity have been increasing impressively for more than the last two decades. However, the market size and liquidity still need to be higher than most of the stock markets of developing countries. Even though the stock market indicators of the DSE remain low compared to international standards, the growth rate of those indicators over the years, despite the market crashes, suggests that it has much potential. The government should encourage the securities segment more than the non-securities segment of the financial system in order to reduce the dependency on bank-based credit, then new instruments will enter the market to increase the attraction of the investors, and as a result, the size, volume, and liquidity of stock market must reach the sizeable level.

The economics and finance theories have constructively contributed to the real economy and enriched the literature over the years. That is why renowned economists such as Tobin in 1981, Modigliani in 1985, Markowitz, Miller, and Sharpe in 1990, Merton and Scholes in 1997, and Fama, Hansen, and Shiller in 2013 have achieved the prestigious Nobel Prize for their theoretical and empirical contribution in financial economics. In this book, the asset pricing models such as Portfolio Theory, Capital Asset Pricing Model (CAPM), Present Value Model (PVM), and Arbitrage Pricing Theory (APT) are compressed to give a theoretical overview of this study. The theoretical basis of this research is consistent with the EMH and APT. The empirical studies that satisfy the issue of stock market efficiency, the relationship between stock prices and macroeconomic variables, and the issue of stock market volatility are also reviewed in this book to give an extensive overview of this study. Subsequently, we specified the number and type of variables that should be included in this study based on the EMH, APT, and empirical literature reviews. A set of variables is identified from the representation of the stock market, goods market, money market, natural resources market, foreign exchange market, and foreign market. In this book, monthly data of all the variables covering the period from January 2001 to December 2012 (144 monthly observations) are used to investigate the semi-strong form of EMH, long–run and short–run relationship, and the volatility of the DSE return in response to the volatility of the six macroeconomic variables. Moreover, daily data of the all-share price index of DSE covering the period from 02 January 1993 to 27 January 2013 (4,824 daily observations) is used to investigate the weak form of EMH and the nature of volatility characteristics of stock returns that prevails on the Bangladesh stock market.

In order to analyse the empirical characteristics of the stock market, applying financial econometric methods is essential. This study presents an exposition of how modern econometric techniques can be utilised to understand the behaviour of an emerging stock market. A set of financial econometric methods is carefully chosen, ensuring that they are appropriate to the study of various issues of the Bangladesh stock market. Methods and models include standard descriptive statistical methods, autocorrelation analysis, run tests, unit root tests, cointegration, vector error correction, Granger causality, GARCH (p, q), EGARCH, and GARCH-S models.

This research explores that DSE does not follow the random walk; consequently, DSE is inefficient in the weak form. Hence, there are chances for the technical investors that they can earn abnormal profits by identifying the trends or patterns in DSE. Empirical estimation of stock valuation models reveals that the Bangladesh stock market is not efficient in semi-strong form as macroeconomic variables such as industrial production index, broad money supply, call money rate, crude oil price, exchange rate, and Indian stock prices do significantly explain the stock prices of Bangladesh stock market either in the short run or long run or both. Thus, all public information is not inherent in current share prices in the stock market of Bangladesh, meaning that both the fundamental analysis based on macroeconomic variables and the technical analysis based on historical stock prices can be used to achieve superior gains. These results support the notion that the equity markets in emerging economies are inefficient.

Univariate volatility models reveal that the stock market returns of Bangladesh exhibit leptokurtosis and volatility clustering. Moreover, bad news substantially impacts DSE return volatility more than good news, implying investors are more prone to negative news than positive news. Multivariate volatility models explore that the volatility of DSE return is significantly influenced by the volatility of macroeconomic variables such as exchange rate, broad money supply, and volatility of the Indian stock market (SENSEX).

This book is a comprehensive research study in finance, financial economics, and financial econometrics and addresses the most central and fascinating area. This book provides a few policy suggestions and possible opportunities for future research in this area. To my knowledge, no previous study has examined the efficiency and volatility dynamics for an emerging stock market simultaneously using the univariate and multivariate econometric models. This book undoubtedly provides valuable information for investors, graduate students, post-graduate students, academics, and policymakers. Thus, it can be used as a reference book in empirical finance at the graduate, master's, and doctoral levels.

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I had expected to publish my PhD thesis as a book in 2019, but that plan came to a halt after receiving feedback from the pre-press team at Cambridge Scholars Publishing in February of that year. The reason for the extra four years required to complete the task will become evident from the results of a multitude of global and individual factors, including the ramifications of the COVID-19 pandemic, supporting my pregnant wife, dedicating quality time to my newborn son, and coping with the unfortunate loss of my father and father-in-law. Before I thank everyone else, I would like to thank Adam Rummens again as I refined the work I had left for four years, inspired and motivated by his series of emails. And, please keep Abrar Hasan, my 4-year-old child, in your prayers, as I deprived him of his desired and deserved time during this refining period.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

As a source of long-term financing, the stock market plays a significant role in accelerating the industrial development of an economy. The stock market is one of the engines of economic growth because it acts as a bridge between savers and investors in savings mobilisation and investment fund allocation. However, entrepreneurs also continuously face enormous pressure from shareholders to do well in business by using that capital. The stock markets of developed countries get more attention to allocate the required capital for the consistent growth of their economies. In contrast, the contributions of the stock market have lately been acknowledged in developing countries. The banking sector is the dominant player in Bangladesh's financial landscape, as is the case with many developing nations. Unfortunately, it is currently facing a crisis due to a significant number of nonperforming, classified, and default loans. Despite several reform efforts in the past, the situation remains challenging. The total nonperforming loans in the banking system of Bangladesh were Tk. 523.1 billion in the middle of 2013, compared to Tk. 427.3 billion in 2012, and Tk. 200.1 billion in 2006 (Lata, 2014). Thus, the stock market may be a complementary financial system with the banking sector in a growing economy like Bangladesh, as Garcia and Liu (1999) and Dima, Dincă, and Spulbăr (2014) uncover that capital markets' development supports a steady evolution in the banking sector. Levine (1991), Levine and Zervos (1996), and Olweny and Kimani (2011), *among others*, argue that stock market development contributes substantially to the economic growth of a country both directly and indirectly. Unlike Haque and Fatima (2011), Hossain and Kamal (2010) reveal that the development of the stock market strongly influences the economic growth of Bangladesh's economy. It is well established that the stock market has become a significant economic barometer in both capitalist and socialist economies. Even the former USSR recognised this vital function performed by stock exchanges in developing its economy (Sachdeva, 1994). So, well-functioning emerging capital markets are expected to accelerate economic growth by increasing savings and investment and making global risk diversification easier for investors. A stock market is said to be an emerging market if it: (i) is located in a country with low and middle income as defined by the World Bank; (ii) has a low market capitalisation relative to the country's Gross National Income level; and (iii) has few restrictions on foreign investment (Standard and Poor's, 2009). So, the stock markets in Bangladesh satisfy the definition of an emerging market. Therefore, the stock market has a crucial role in creating a robust industrial base in emerging markets like Bangladesh, whose economy has progressed rapidly over the last two and a half decades.

Efficiency and volatility have been the most active and thriving research areas in time series econometrics and finance in the past three decades. The efficient market theory infers that stock prices exhibit all available information, like past stock price patterns, company fundamentals, and economic fundamentals. Consequently, forecasting future stock prices should be a trivial task in an efficient stock market by watching past price patterns, company fundamentals, and economic fundamentals. Theoretically, the stock market should be closely associated with the real economic variables of a country. Based on a simple discount model, if the fundamental value of the corporate stock is equivalent to the present value of expected future dividends, the future dividends must ultimately explain the real economic activity. So, information on the connection between micro and macroeconomic variables (macroeconomic factors like interest rate, inflation rate, exchange rate, and money supply; microeconomic factors like price-earnings ratios, market capitalisation, trading volume, and dividend yield) and stock prices is decisive to the investors in the equity market as well as to the policymakers. Both equally specialised and amateur investors try to predict future market activity day after day. Investors are immensely interested in discovering variables that may help forecast stock prices so they can decide on their portfolio for maximum gains.

On the other hand, policymakers pay attention to the relationship because they can better control the economy's direction, extent, and stability by adjusting real economic variables. If the relationship between stock prices and micro-macroeconomic variables exists, the stock market of Bangladesh loses its informational efficiency and becomes more volatile. The influence of economic factors and past stock price patterns on stock prices has been subjected to economic research worldwide. However, the study on the efficiency and volatility of the stock market in Bangladesh in response to macroeconomic variables needs to be addressed.

This study exerts an endeavour to explore the problem of efficiency and volatility of the stock market in Bangladesh by operating both univariate models utilising daily past share price data and multivariate models applying monthly data on macroeconomic variables and the stock index. Four logics prefer the top-down approach to stock market behaviour analysis. First, the top-down approach is a macroeconomic analysis of investing in the stock market. Crescenzi (2009) illustrates several points in favour of the top-down approach to stock market analysis and argues that the golden age for macroeconomics has arrived and that top-down analysis has become a must-acceptable tool to study stock market behaviour due to globalisation. The stock market and its relationship with monetary and fiscal policy, the wealth effect, market sentiment, and sector analysis have been sincerely focused on electronic and print media. Bottom-up analysis, like individual stock-related microanalysis, is too time-consuming for investors, who must focus on many other daily tasks. That is why investors are shifting towards top-down analysis instead of bottom-up analysis. Second, the aggregate share price, or stock price index, is a macroeconomic variable. Therefore, performance analyses like efficiency and volatility in stock prices should be more effective with a macroeconomic framework. Third, the stock market can be affected by macroeconomic variables through the effect of the demand for shares. Demand and supply analysis, under the price mechanism, implies that the supply of shares is fixed, i.e., inelastic to profit or interest rate; however, the demand for shares is elastic and depends on determinants like interest rate, GDP, industrial production index, and inflation rate (Erdugan, 2012). Hence, the price mechanism connects the economic markets such as the product market, labour market, money market, capital market, resources market, foreign exchange market, and foreign market, and apparently, the variables of those markets must have some influence on the variables of the share market. Fourth, asset pricing theories of the asset valuation model have also been constructed based on the demand side of the stock market.

This study may lead the way for Bangladesh's perspective in attempting to use a top-down approach to testing both efficiency and volatility of Dhaka Stock Exchange aggregate stock prices from the joint viewpoint of the Efficient Market Hypothesis (EMH) and a macroeconomic version of the most prominent equilibrium asset pricing model named, the Arbitrage Pricing Theory (APT).

1.2 Statement of the Problem

Al-Jafari et al. (2011) explore that over the past several decades, emerging countries have experienced persistent and high economic growth rates. They also comment that while many factors explain economic growth, trade and capital market liberalisation have played an important role. The World Bank (2013) denotes that Bangladesh has sustained an impressive growth and development track record. The stock market of Bangladesh developed, followed by the overall economy after the liberalisation in the early 1990s. The stock markets of Bangladesh are comparatively new related to other emerging countries; however, they obtain an important focus by policymakers, investors, academicians, and even general citizens. This study aims to explore the behaviour of the Bangladesh stock market, considering the above-stated facts.

Stock or share is the smallest portion of the ownership of an asset. The stock exchange is an organisation to ease buyers and sellers to buy and sell listed securities. The stock market is well-known as a comparatively cheap source of funds contrasted with the money market. Equally, the government and the private sectors would need long-term capital to set up infrastructures, build new factories or buy new machinery at any stage of a nation's advancement that is usually financed by a well-functioning stock market. The stock markets of Bangladesh are not a steady market. For a while, the market index increases continuously and accordingly, the stock prices become incredibly sky-scraping, and investors accept satisfaction from abnormal profit. In reverse, the market drops vastly at times, and thus investors get a loss. Hence, it is essential to investigate the performance of the stock market of Bangladesh by determining the state of volatility and efficiency based on the actions of historical stock prices and economic variables. Informational or market efficiency measures how quickly and correctly the market responds to new information. Volatility measures how the present price of an asset deviates from its past average prices.

Bangladesh has two stock exchanges: Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE). Dhaka Stock Exchange is the oldest and biggest stock exchange in Bangladesh. However, DSE was established on 28 April 1954, but its commercial operation started in 1956. Over the years, DSE has become one of the leading emerging markets in the South Asian region. Dhaka Stock Exchange has grown dramatically and gained second place in South Asia as the market capitalisation ratio to GNI grew 925% between 2000 and 2011 (Khan, 2013). DSE functions with 535 listed securities (262 companies, 41 mutual funds, 8 debentures, 221 treasury bonds, and 3 corporate bonds) with Tk. 2.95 lakh crore of market capitalisation at the end of April 2014 (DSE, 2014). DSE used three share price indices: DSE General Price Index (DGEN), DSE All-Share Price Index (DSI), and DSE-20 before commencing Standards & Poor's designed DSE Broad Index (DSEX) and DSE 30 Index (DS30) on 28 January 2013.

For the study, Dhaka Stock Exchange is considered as the representative of the stock market of Bangladesh, and the all-share price index (DSI) from DSE is considered as it covers most of the stocks in the country. DSE faces two significant collapses during the years 1996 and 2010. The index of the Dhaka Stock Exchange lost an unusual amount of its value and wiped out millions of Taka. DGEN of DSE came down to 700 points in November 1997 from its highest of 3600 points in November 1996 (Alam, 2012). As a result, regulators have taken several steps to stabilise the market. Nevertheless, once again, the market crashed heavily in 2010. The DGEN of DSE came down 3616 points in early February 2012 from 8918 points in December 2010 (Alam, 2012). Moazzem and Rahman (2012) address the problem of the capital market of Bangladesh and argue that not only inefficiency but also a series of problems are present in the primary and secondary stock markets. Whatever the reason for these incidents, it is apparent that some investors can gain extraordinary profits, whereas some get immense losses from the capital market. If markets are efficient, then stock prices fully reflect all information present in the market. Though it is usually believed that developed stock markets are more efficient than developing and underdeveloped markets due to flow, adjustment, and magnitude of information, the study tries to find out whether the stock prices of Bangladesh are predictable by investors and policymakers. It is also well-accepted that volatility characterises the action of the stock market. If the price of a stock fluctuates widely, the volatility will be high; conversely, if the price variation is low, it has low volatility. Daly (1999) argues that volatility has become important since financial and economic theory introduces the notion that consumers are risk-averse. As a result, the increased risk associated with a given economic activity should realise a reduced level of participation, which will have adverse consequences for investment. Nevertheless, the investors of the stock markets generally like to adopt more risk in order to earn more returns. Therefore, a small amount of volatility in stock prices is a good sign of any stock market. Nevertheless, the problem is that the stock market of Bangladesh is up-and-coming. The radical inconstant nature of DSE is the focal dilemma. This unusual phenomenon may prevent the smooth functioning of stock markets and adversely affect the economy's performance. Previous studies, like Groenewold and Kang (1993) and Erdugan (2012), examine the weak form efficiency using historical share price indices and the semi-strong efficiency using macroeconomic variables. Mecagni and Sourial (1999) and Siourounis (2002), *among others*, test the efficiency and volatility using historical share price indices. Fama (1981 and 1990) and Chen, Roll, and

Ross (1986) investigate that price volatility in the stock market rises due to changing economic variables.

The increasing consequence of stock markets globalisation has intensified the interest in developing markets. Hence, researchers have concentrated on whether these markets are efficient. The stock market of Bangladesh has been growing prominently for the past two and a half decades. Therefore, estimating the efficiency of the stock market is a vital research problem as this comprises many implications for investors. Besides, the stock market crashes notify that it is essential to shield the stock market from severe fluctuations. So, checking the volatility of stock returns is an informative examination as it carries several signs for investors and policymakers. Hence, this research is intended to investigate Bangladesh's stock market's efficiency and volatility from a macroeconomic perspective.

1.3 Research Questions

The followings are the leading research questions on the topic of this research:

i) What is the nature of the stock market efficiency in Bangladesh?
ii) Do the macroeconomic variables this study incorporate share short-run and long-run relationships with the stock prices?
iii) Are there any causal relationships between the stock index and macroeconomic variables? What is the direction of the causality, if there is any?
iv) What volatility characteristics of stock returns prevail in the Bangladesh stock market?
v) Does the volatility of macroeconomic variables affect the stock return volatility?

1.4 Objectives

1.4.1 Broad Objective

The overall purpose of this study is to explore the effect of historical stock returns on current stock returns and the impact of economic factors on stock prices to get an idea about the magnitude of efficiency and volatility of the Bangladesh stock market.

1.4.2 Specific Objectives

The specific objectives are as follows:

i) To investigate the efficiency of the stock market in Bangladesh;
ii) To examine the short-run dynamics and long-run equilibrium links between economic variables and stock prices;
iii) To explore the causal relationships and direction of the causality between the stock index and macroeconomic variables;
iv) To assess the volatility characteristics of stock returns;
v) To examine the volatility of stock market returns in reaction to the volatility of the macroeconomic variables.

1.5 Significance of the Study

Since Bangladesh has adopted a free market economy as her national policy is to achieve her goals of higher growth and rapid privatisation, she must uplift her stock market and make it capable of working as the primary vehicle for mobilising and allocating funds needed to finance industrial and other development activities of the country. No alternative path is appropriate, like a stock market, to strengthen the financial base of a country by gearing up its development activities to achieve its absolute economic freedom. Considering the significance of the stock market to the real economy, Bangladesh's stock market has recently attracted attention to the literature. The study is expected to add several primary contributions to the existing literature.

First, quite a few studies have been conducted to test the stock market's efficiency and volatility. Most of them have used only historical stock index data to test efficiency and volatility. Although renowned researchers have conducted bunches of studies worldwide to find out the relationship between macroeconomic variables and stock prices, the efficiency and volatility test using a top-down approach has primarily been overlooked. This study fills the gap in the literature as it explores the efficiency and volatility of DSE by using both univariate and multivariate time series models.

Second, only some research has been conducted in Bangladesh to test weak forms of efficiency. This study should be considered a unique work because the random walk hypothesis of weak-form EMH is tested employing both nonparametric tests (Run test and Phillips-Perron test) and parametric tests (Autocorrelation test and Augmented Dickey-fuller test). Moreover, the semi-strong form of EMH is also tested by applying the VAR model using macroeconomic variables based on joint hypothesis testing of EMH and Arbitrage Pricing Theory.

Third, this study attempts to investigate the nature of volatility characteristics of stock returns that prevail on the Bangladeshi stock market and investigates the volatility of the DSE return in response to the volatility of the six macroeconomic variables employing a sophisticated econometric GARCH family model framework.

Fourth, this research should contribute to the literature as a special set of macroeconomic variables is chosen based on grounds rather than randomly selected variables, and how the variables influence stock market prices have been identified. Variables from each economic market are selected considering that the economy of Bangladesh follows the well-known price mechanism of the free market economy.

Fifth, this study would widen the existing literature as local and global macroeconomic variables are used to predict whether the Bangladeshi stock market is motivated mainly by domestic macroeconomic factors or whether global stock markets have some influence on it. Moreover, it explores the long-run equilibrium and the short-run dynamic links between economic variables and aggregate stock prices of Bangladesh by using a new set of data that are analysed with a series of econometric models.

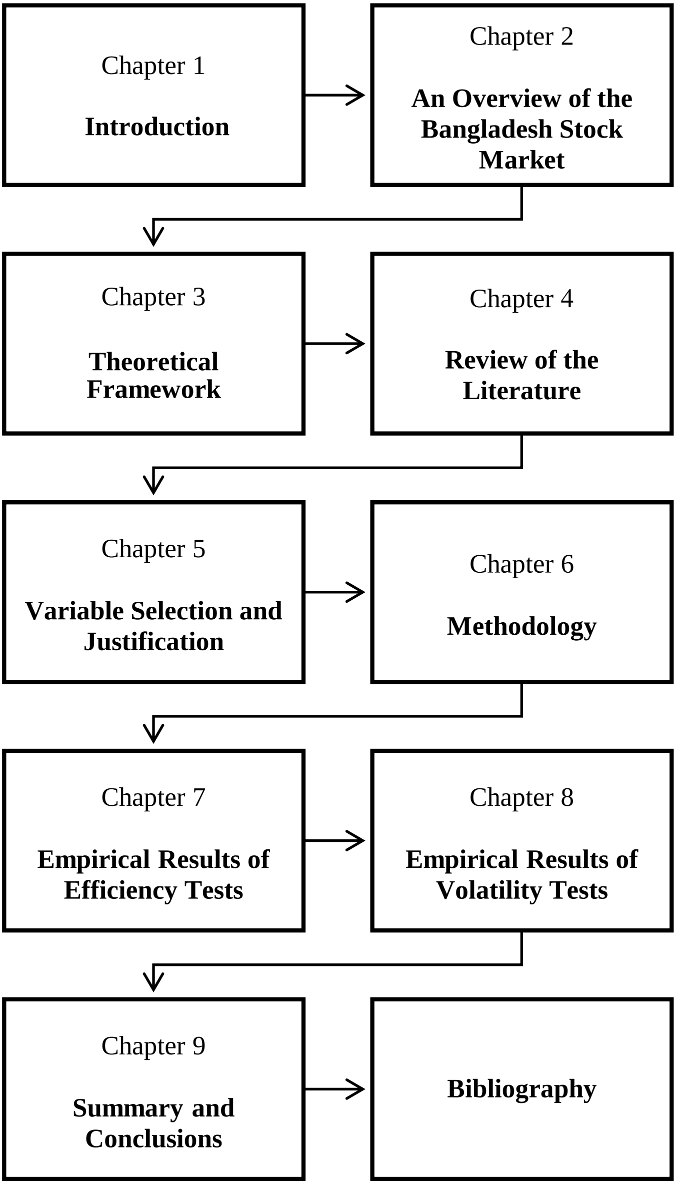
Finally, the study's results should give some new references to private investors, institutional investors, and policymakers about the critical issues of the stock market in Bangladesh.

Therefore, the overall contributions of this study should positively affect the Bangladesh economy, as thorough investigations of stock price behaviour employing modern econometric techniques give valuable knowledge to investors to allocate their portfolio efficiently and policymakers to regulate existing policies or implement new policies to attract more investments.

1.6 Structure of the Book

The book comprises nine Chapters, as shown in Figure 1-1.

Figure 1-1: Structure of the Book



The remainder of the book is organised as follows. Chapter 2 provides some facts on the performance of the Bangladesh economy and, after that, an overview of the financial system of Bangladesh. In particular, this chapter outlines a context for the remainder of the book. The chapter further discusses a historical review of the development stages of the Bangladesh stock market since its inception in 1954. A statistical review of the performance of the Dhaka Stock Exchange from 1991 to 2012 is also evaluated based on market activity, market size, and market liquidity. Finally, the status of DSE from the world stock market perspective is also uncovered in the Chapter.

The theoretical asset pricing models and empirical studies are reviewed in Chapters 3 and 4 to give a broad overview of the topic. Chapter 3 summarises the theoretical framework, such as the Efficient Market Hypothesis (EMH) and the theory of asset pricing, such as Portfolio Theory, Capital Asset Pricing Model (CAPM), Present Value Model (PVM) and Arbitrage Pricing Theory (APT).

Chapter 4 reviews the empirical studies that have employed various quantitative methods to examine the theories in developed, emerging, and Bangladesh stock markets. In particular, the Chapter discusses the empirical research that has examined the weak form of the EMH, the semi-strong form of the EMH, stock market volatility, and the relationships between various macroeconomic variables and share prices in developed, developing and Bangladesh stock markets.

In Chapter 5, a set of variables is identified after appropriate scrutiny. Upon appropriate validation process, the variables are hypothesised and also discussed the measurement procedure before considering them in the models for empirical analysis.

The methodology and methods underpinning the research in the current study are outlined in Chapter 6. Specifically, the chapter presents an explanation of how modern econometric techniques can be employed to understand the behaviour of the Bangladesh Stock Market. A set of financial econometric methods such as autocorrelation test, run test, unit root tests, cointegration, vector error correction, Granger causality, GARCH (p,q), EGARCH, and GARCH-S models are discussed in the Chapter.

Chapter 7 presents the empirical analysis of the efficiency tests, which examines the weak form of EMH, the semi-strong form of the EMH, and the long-run equilibrium relationships and short-run dynamic linkages between stock prices and macroeconomic variables.

Chapter 8 offers the empirical analysis of the volatility models, which initially reports the results of the univariate volatility models to assess the stylised facts of stock returns prevailing in the Bangladesh stock market using daily closing stock prices throughout 20 years. Then the chapter presents the results of the multivariate volatility models to estimate whether the volatility of the macroeconomic variables incorporated in this study impacts stock market volatility in Bangladesh using monthly data of the variables over 12 years.

Finally, Chapter 9 concludes the book. This chapter summarises the main findings of this study. The chapter also provides suggestions for future research on this topic. In the end, it presents some policy implications related to the findings of this study.

1.7 Conclusion

This chapter familiarises the reader with the remainder of this book. It gives some light on the motivation and the significance of the research. In addition, the chapter specifies a roadmap to guide the reader on the structure and content of the book. In particular, it highlights that the book concentrates on five specific objectives. The study investigates the weak form efficiency and the nature of volatility characteristics of stock returns in the Bangladesh stock market using daily all-share price return data of the Dhaka Stock Exchange from 02 January 1993 to 27 January 2013. Also, the study examines the semi-strong form of the EMH and the volatility of the DSE return in response to the volatility of the macroeconomic variables with an equilibrium asset pricing model named APT using monthly data from January 2001 to December 2012. Moreover, the relationships between macroeconomic variables (domestic and international) and aggregate stock prices in Bangladesh are determined.

CHAPTER TWO

AN OVERVIEW OF THE BANGLADESH STOCK MARKET

2.1 Introduction

After highlighting the background, intention, and structure of this study in Chapter 1, this chapter introduces an overview of the Bangladesh stock market. Bay of Bengal-bound Bangladesh shares borders with India and Myanmar. It was formerly part of the Indian subcontinent and became Pakistan in 1947. Bangladesh finally achieved independence in 1971 after experiencing 23 years of social and economic oppression by West Pakistan. A protracted political battle and a nine-month War of Liberation against the Pakistani army led to this success. Bangladesh is one of the most populous nations, with a population of 160 million and a land mass of 147,750 square kilometres. Over the past 43 years since independence, Bangladesh's real per capita income has risen by over 130%, cut the poverty rate by 60%, and is well set to achieve most of the millennium development goals despite frequent natural disasters, political instability, and the global financial crisis. Aside from this past progress, Bangladesh is still a lower-middle-income country and aspires to be middle-income by 2021.

Because this research involves investigating the efficiency and volatility of the Bangladesh stock market, it is crucial and meaningful to describe some relevant features of the Bangladesh economy, its stock markets, and the transformations that have taken place within them since the country became independent. For that reason, we first state some facts on the performance of the Bangladesh economy in Section 2.2, and after that, we give an overview of the financial system of Bangladesh in Section 2.3. Subsequently, Section 2.4 represents a historical assessment of the development stages of the Bangladesh stock market since its commencement in 1954. Section 2.5 provides a statistical review of the stock market's performance, while the status of DSE from a global stock market perspective is delivered in Section 2.6. Finally, Section 2.7 organises the conclusion of the chapter.