DIVIDEND POLICY AND BEHAVIOUR, AND SECURITY PRICE REACTION TO THE ANNOUNCEMENT OF DIVIDENDS IN AN EMERGING MARKET

A Study of Companies Listed on the Dhaka Stock Exchange

By

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The candidate confirms the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

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ABSTRACT

'The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together' (Black 1976, p. 5). A number of researchers provide insights, theoretical as well as empirical, into the dividend policy puzzle. However, the issue as to why firms pay dividends is as yet unresolved. Several rationales for the corporate dividend policy propose in the literature, but there is no unanimity among researchers. Everyone, however, agrees that the issue is important, as dividend payment is one of the most commonly observed phenomenon in corporations world-wide.

Several studies have been conducted on dividend policy and behaviour, and security price reaction to the announcement of dividends but a very few studies have been conducted on emerging markets, therefore, a quite lot of issues of the emerging markets are still unresolved. Therefore, the existing published evidence is of limited relevance in identifying the appropriate dividend policy and behaviour, and security price reaction to the announcement of dividends in an emerging market.

The objectives of this thesis are threefold: *firstly*, to identify the determinants of dividend policy, *secondly*, to investigate the dividend behaviour, and *thirdly*, to identify the security price reaction to the announcement of dividends in an emerging market.

The empirical results identify leverage, size, insider ownership, and collateralizable assets as the major determinants of dividend policy. However, the empirical results document that dividend decision is primarily governed by cash flow for measuring the capacity of the companies to pay dividends and dividends paid in the previous years, i.e., lagged dividends. The empirical results also identify Brittain's (1966) partial adjusted model as the best-fit dividend behavioural model. Furthermore,

as insiders trade in the market, so, information used to be adjusted with the share prices before announcement and consequently dividend announcement does not carry any new information to the market. Therefore, the empirical results document no significant impact of dividend announcements on the security prices of an emerging market. Finally, the empirical results identify that the emerging markets are inefficient.

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Chapter One: Introduction

1.0. Introduction:

'The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together' (Black 1976, p. 5). A number of researchers provide insights, theoretical as well as empirical, into the dividend policy puzzle. However, the issue as to why firms pay dividends is as yet unresolved. Several rationales for the corporate dividend policy are proposed in the literature, but there is no unanimity among researchers. Everyone, however, agrees that the issue is important, as dividend payment is one of the most commonly observed phenomenon in corporations world-wide.

Corporate dividend policy has long been an issue of interest in the financial literature. Thus far, this issue has been examined under the assumption that the firm is one homogeneous unit whose clear objective is to maximise its market value (Miller and Modigliani, 1961; Brennan, 1970; and Miller and Scholes, 1978). Some researchers believe that dividends increase stockholders wealth (Gordon, 1959), on the other hand, some others believe that dividends decrease stockholders wealth (Litzenberger and Ramaswamy, 1979). However, others believe that dividends are irrelevant (Miller and Modigliani, 1961; and Miller and Scholes, 1978).

Gordon and Shapiro (1956), Gordon (1963), Solomon (1963), and Walter (1963) first introduced bird-in-the-hand models. In brief, all of those models argue, after the security analyst's *"bible"* of Graham and Dodd (1934), that investors buy stocks in order to receive dividends. In contrast, Miller and Modigliani (1961) view that in a perfect capital market dividend policy is irrelevant, i.e., the investors are indifferent between dividend payments and capital gains.

This study attempts to resolve the issues of dividend policy and behaviour, and security price reaction to the announcement of dividends and special reference to the emerging markets. The major objective of this chapter is to give a brief outline of the whole thesis including the research problem, objectives, justification, and the structure of the thesis. The rest of this chapter is divided into five sections. The outline of the research problems along with the stated research questions is included in section 1.1. Section 1.2 provides a brief outline of the empirical aspects of this study. The rationale and justification for conduction of this research is incorporated in section 1.3. Section 1.4 describes the structure of the thesis. Finally, the summary and concluding remarks are included in section 1.5.

1.1. Outline of the Research Problem:

Black (1976, p. 5) poses the question, *'Why do corporations pay dividends?'* In addition, he poses the second question, *'Why do investors pay attention to dividend?'* Although the answers to these questions may appear obvious, he concludes that they are not. After over two decades since Black's paper, the dividend puzzle persists.

Firms raise equity capital in order to invest in real assets that are expected to produce future cash flows. The shareholders have a claim on these cash flows. However, the firm's management has the power to determine whether these cash flows are paid directly to the shareholders as dividends or retained as a source of fund for further investment within the business. Hence the dividend decision is of potentially great importance to both shareholders and the firm (Glen *et al.* 1995). The main objective of the financial management is to maximise shareholders wealth (Van Horne and Wachowicz, 2001). The managers can maximise shareholders wealth sometimes by paying dividends and sometimes by retaining earnings for further investment. It depends on the growth prospects or available investment opportunities of the firm. If the firm is a growing firm or if the firm has available investment opportunities with positive expected returns, then usually the firm retains the earnings for further investment because it is normally the cheaper and more dependable source of finance. If the firm is a declining firm, i.e., the firm has no suitable investment opportunities with positive expected returns, then it is better to distribute earnings to shareholders as dividends (Gordon, 1962; and Walter, 1963). In practice, firms neither distribute all of their earnings to shareholders as dividends nor retain all of their earnings for further

investment. Usually, the firms distribute a portion of earnings to the shareholders as dividends and retain the remainder for further investment or as a reserve.

It is worth drawing attention at this point to the fact that it is very much known to all that the stock prices heavily influenced by the payment of dividends. Previous studies suggest that stock prices increase for increasing dividends and on the other hand stock prices fall for reducing or cut dividends (Asquith and Mullins, 1983; Healey and Palepu, 1988; and Michaely *et al.* 1995). However, in practice, some companies declare stable dividends as well as some others declare fluctuating dividends closely related to their income and sometimes related to their policy and strategy for retaining goodwill in the competitive market. Moreover, we also see that some companies consistently pay increasing dividends, some companies pay decreasing dividends, and some others pay no dividends at all. Therefore, this research will concentrate on these research questions: *one*, what are the criteria to determine dividend, *two*, how does dividend policy behave and is there any difference between the behaviours of dividend policy of developed markets and emerging markets, and *three*, how does security price react to the announcement of dividends and do security prices react differently in an emerging market in comparison to developed markets?

Several studies have been conducted on the developed markets in different issues of dividend policy and behaviour but a very few have been conducted on the emerging markets, so, the existing evidence is of limited relevance in identifying the appropriate dividend policy and behaviour in an emerging market. However, it is known from experience that the companies listed on the emerging markets are quite different from the developed financial markets in all respects. So, dividend policy and behaviour of the emerging markets are also likely to be quite different in these markets from developed markets. Moreover, it is also known that the emerging markets enlisted companies are insider controlled closely held firms and as informed insiders, brokers, and exchange employees play their role in the market as speculators, which causes information asymmetry and irrationality in the emerging markets. Because of these reasons, the behaviour of the Dhaka Stock Exchange as an emerging market is likely to be quite different from what typically is the case in respect of an efficient market, such as the NYSE. The behaviour of companies listed on the Dhaka Stock Exchange is also different from the companies listed on efficient markets. The dividend behaviours of

firms listed on these two markets are also assumed to be different. That is why it is seen that the behaviour of the companies listed on the Dhaka Stock Exchange appear differently from what might be expected from reading the literature derived from developed financial markets and knowledge of financial markets derived from finance text books.

As there is no such strict rule to pay dividends to shareholders in each year but it is rather very much flexible and solely depends on the decision of the financial management of the company. However, the financial managers make this decision by taking the financing and investment policy of the firm, the company's own policy and strategy and many other aspects into account.

As there is no hard and fast rule regarding the optimum dividend to declare, the first phase of this study will deal with the first research question that is to identify the criteria to determine the dividend policy in an emerging market. It will also investigate whether dividend policy is determined in an emerging market the same way as developed markets. However, it has been mention earlier that the behaviour of the Dhaka Stock Exchange is likely to be quite different from developed markets because of differential nature of these two markets. Therefore, the second phase of this study will also deal with the second research question of this study, i.e., to investigate the dividend behaviour of an emerging market. This study will also investigate whether dividend policy behaves the same way as developed markets or differently. However, the previous studies suggest that stock price increases with the announcement of increasing dividends and stock price falls because of dividend cuts (Asquith and Mullins, 1983; Healey and Palepu, 1988; and Michaely *et al.* 1995). Therefore, the final empirical phase will deal with the third research question that is to examine whether stock price reacts to the announcement of dividends or not and if it does then how it reacts to the announcement of dividends. However, this study will also investigate whether security price reacts to the announcement of dividends in an emerging market in the same way as developed markets or differently.

1.2. Objectives of the Study:

1.2.1. Broad Objectives:

The major objectives of this study are threefold: *firstly,* to identify the determinants of dividend policy; *secondly,* to identify the dividend behaviour; and *thirdly,* to identify the security price reaction to the announcement of dividends in an emerging market.

1.2.2. Specific Objectives:

The specific objectives of this study are as follows:

(a) As no recognised study has been conducted to identify the determinants of dividend policy in emerging markets and also given that empirical studies have lagged behind theoretical studies; the first objective of this study is to identify the determinants of dividend policy in an emerging market and to minimise the gap between empirical and theoretical studies. For these purposes, this study will primarily shed light on the dividend theories and then will identify the determinants of dividend policy in an emerging market. Firstly, this study will review the theoretical and empirical evidence on dividend theories and at the end this study will also try to identify the unresolved research questions on the issue of dividend theories. Secondly, this study will build up hypotheses and will test the hypotheses on the dividend theories. Finally, this study will identify the determinants of dividend policy in an emerging market based on dividend theories, which will ultimately serve the first objective of this study.

(b) However, given the lack of sufficient studies on dividend behaviour in emerging markets, it is very difficult to identify the dividend behaviour of an emerging markets from the available studies. Therefore, this study attempts to identify the dividend behaviour of emerging markets to serve the second objective of this study. Firstly, this study will review the major studies on the dividend policy and behaviour to raise the unresolved research questions of dividend behaviour and to build up primary ideas about the dividend behaviour of emerging markets. Secondly, this study will develop the hypotheses and then will use partial-adjustment models to test the predetermined hypotheses about the dividend behaviour of emerging markets.

(c) In addition, previous empirical studies suggest that security prices react to the announcement of dividends but there is no such study has been conducted in emerging markets testing security piece reaction to the announcement of dividends. Therefore, this study will solve the final research problem and will serve the final objective of this study. Firstly, this study will review the previous theoretical and empirical studies to identify the unresolved research problems and to develop the hypotheses of this research question. Secondly, this study will test the predetermined hypotheses to identify the security price reaction to the announcement of dividends in emerging markets. However, as this study employs event study methodology to solve the final research question, so, this study will also test the semi-strong form of market efficiency of the emerging markets.

1.3. Main Area of Research:

The issue of dividend policy is important for several reasons. *Firstly*, researchers have found that a firm uses dividends as a mechanism for financial signalling to the outsiders regarding the stability and growth prospects of the firm. *Secondly*, dividends play an important role in a firm's capital structure. Yet another set of studies have established the relationship between firm dividend and investment decisions (Saxena, 1999).

This research attempts to investigate the dividend policy and behaviour, and security price reaction to the announcement of dividends in an emerging market. The empirical parts of this study concern about the major research questions. The empirical parts are divided into three phases based on the three main research questions.

Empirical Phase I:

This phase of the research is based on the first research question. Primarily, this study will observe the dividend policy of an emerging market. This study will then attempt to identify the criteria that determine dividend policy in an emerging market or to identify the influential factors to determine dividend policy in an emerging market. In addition, this phase of the study will also investigate whether there is any difference between developed markets and emerging markets in the determination of dividend policy. This study will also investigate whether the criteria to determine dividend in an emerging market supports the previous empirical studies and the dividend theories or

not. At the end of this phase, this study will indicate the major contribution of the study to the existing research and as well as to finance theory.

Empirical Phase II:

This phase of the study will deal with the second research question of the study. In this phase, the study will investigate the dividend behaviour of an emerging market, i.e., to identify how dividend policy behaves in an emerging market. This study will conduct an empirical investigation on the partial-adjustment models to identify whether partial-adjustment models can explain dividend policy in an emerging market or not. This study will also identify whether there is any difference between the dividends behaviours of emerging markets and developed markets. Finally, this study will identify the best-fit partial adjustment model in an emerging market. At the end of this phase, this study will also indicate the major contribution of the study to the existing research and as well as to finance theory.

Empirical Phase III:

This phase of the study will deal with the final research question of this study, i.e., to investigate the security price reaction to the announcement of dividends in an emerging market. *Firstly*, the study will investigate whether security price reacts to the announcement of dividends or not. *Secondly*, if it does, then this study will investigate how security price reacts to the announcement of dividends in an emerging market. This study will also identify whether there is any difference between the security price reactions of developed markets and emerging markets to the announcement of dividends. In addition, this study will investigate whether security price reaction to the announcement of dividends of an emerging market supports the dividend theories and previous empirical studies or not. Moreover, this study will investigate whether announcement of dividend works as a signalling device to influence the stock prices in an emerging market or not. At the end of this phase, this study will indicate the major contribution of the study to the existing research and as well as to finance theory. In addition, this study employs event study methodology to identify the security price reaction to the announcement of dividends, which is a tool of testing semi-strong form of market efficiency. Therefore, this study will also test whether the emerging markets are semi-strong form efficient or not.

1.4. Rationale of the Study:

Several studies have been conducted on dividend policy and behaviour but a very few studies have been conducted on emerging markets. Therefore, many issues of dividend policy and behaviour of an emerging market remain unresolved. Although a great many studies have been conducted on dividend signalling and information content of dividend in developed markets, there is no such recognised study found about the effectiveness of the dividend announcement as a signalling device to influence the security prices of an emerging market. Therefore, the existing published evidence is of limited relevance in identifying the appropriate dividend policy and behaviour, and security price reaction to the announcement of dividends in an emerging market.

Although a few studies have been published on emerging markets, these studies are not sufficiently able to answer either of the present research questions. Therefore, it directs to conduct this research to solve the current research problems of an emerging market. However, the dividend policy of emerging markets appears to be largely unpredictable from previous studies. So, whether or not the main reason for this unpredictable behaviour is irrational decision-making or is related to some fundamental economic variable(s) is something which this thesis will investigate. This research will also find out the clear difference between the emerging markets and developed markets and that will obviously help to identify how far the position of emerging markets diverges from developed markets. In addition, it has not yet been tested whether established dividend theories work in the emerging markets or not. This research is the first attempt to identify whether dividend theories are applicable only for developed markets or are also applicable to emerging markets as well.

In addition, until now there is no study conducted on the Dhaka Stock Exchange to identify the dividend policy and dividend behaviour, and security price reaction to the announcement of dividends of the companies listed on this market. So, this is an emerging need to conduct the proposed research to identify the dividend policy and behaviour of the Dhaka Stock Exchange listed companies. This research will also attempt to identify the security price reaction to the announcement of dividends of the Dhaka Stock Exchange listed companies on which no study has yet been conducted.

1.5. Structure of the Thesis:

As we have already been mentioned earlier that this chapter will give a very brief outline of the whole thesis, i.e., dividend policy and behaviour, and security price reaction to the announcement of dividends in an emerging market. For these purposes, the whole thesis has been dividend into five sections. Section one is basically for the building up the general conception of the empirical study on the dividend policy and behaviour in an emerging market. Section two, three, and four are for the empirical phase one, two, and three respectively. The descriptions of the main sections of this thesis are explained in the following paragraphs.

Section one: this section is the general overview of the thesis. This section is divided into three parts. Part one concentrates on the capital market of Bangladesh. The objective of this part is to discuss the position of Bangladeshi capital markets as an emerging market. It provides a brief review of Bangladesh capital markets as a whole and then a comparative analysis is made with the developed, emerging, and markets in the region. Part two a description of the Dhaka Stock Exchange. This part provides an extensive description of the Dhaka Stock Exchange including growth and development, general characteristics and the remarkable features of the listed companies, and the performance of the Dhaka Stock Exchange at a glance. However, as non-financial sector companies are considered as the sample of this study, this part also provides a brief description of the remarkable features of the non-financial sector companies listed on the Dhaka Stock Exchange including the size of the companies, payment pattern, risk and return, and the ownership pattern in order to have a clear understanding about the companies of the sample. Part three describes the general research methodology of the thesis. This part provides an extensive description of the research methodology of this study including the justification of choosing quantitative research method and data analysis techniques.

Section two: this section provides the detailed description of the empirical phase one, i.e., determinants of dividend policy in an emerging market. This section is divided into two parts. Part one reviews the major dividend theories including the review of previous empirical studies for and against the dividend theories. Part two examines the empirical results of phase one, i.e., determinants of dividend policy in an emerging market, which are based on existing dividend theories. Part two provides the

detailed explanation of the empirical results on the determinants of dividend policy of the companies listed on the Dhaka Stock Exchange.

Section three: this section is framed for the empirical phase two, i.e., testing partial adjustment dividend behavioural models in an emerging market. This section is also divided into two parts. Part one provides an extensive literature review on the major studies of dividend policy and behaviour. Part two is designed for the empirical study on the dividend policy and behaviour in an emerging market and especially to test the partial adjustment models. This part provides the detailed explanation of the empirical results on the partial adjustment models.

Section four: this section is formulated for the empirical phase three, i.e., security prices reaction to the announcement of dividends in an emerging market. This section is also divided into two parts. Part one provides an extensive literature review on the security price reaction to the announcement of dividends in developed markets. Part two is designed for the empirical analysis on the security price reaction to the announcement of dividends in an emerging market. This part explains the empirical results of the security price reaction to the announcement of dividend in an emerging market. Finally, a brief summary of the thesis along with major contribution of this thesis to the theories of finance and to the existing research, implications of the research, limitations of the research, and suggested further research are included in summary and conclusion chapter.

1.6. Conclusion:

The objectives of this thesis are threefold: *firstly*, to investigate the determinants of dividend policy, *secondly*, to investigate the dividend behaviour, and *thirdly*, to investigate the security price reaction to the announcement of dividends in an emerging market. The empirical phase one concludes that the major determinants of dividend pay-out ratio in an emerging market are leverage, size, insider ownership, and collateralizable assets. However, the empirical phase two concludes that dividend decision is primarily governed by cash flow for measuring the capacity of the companies to pay dividends and dividends paid in the previous years, i.e., lagged dividends in an emerging market. The empirical studies also conclude that Brittain's (1966) partial adjusted model offers satisfactory explanation of dividend behaviour in

an emerging market. However, the empirical phase two also strongly supports Lintner's (1956) partial adjustment model. Finally, the empirical phase three concludes that there is no significant impact of dividend announcement on the security prices of an emerging market because as insiders trade in the market so the information is used to adjust the share prices before announcement, and therefore the announcement of dividends do not carry any new information to the market. However, this empirical phase also concludes that emerging markets are inefficient.

As no significant study has been conducted yet on dividend policy and behaviour, and security price reaction to the announcement of dividends in emerging financial markets, there is an emerging need to conduct this study and especially to deal with the unresolved issues of dividend policy and behaviour, and security price reaction to the announcement of dividends. However, this study will sufficiently be able to solve the research problems raised for emerging markets on dividend policy and behaviour, and security price reaction to the announcement of dividends.

This study arises to be the benchmark of the empirical studies on dividend policy and behaviour, and security price reaction to the announcement of dividends in the emerging markets. Moreover, this study will draw attention to the portfolio investors, security analysts, policy-making bodies, and especially regulatory bodies of the emerging markets. This study will obviously provide a clear guideline to the parties associated in the market and especially to the outsider investors and to the regulatory bodies. Finally, it could be concluded that, *'it is the right attempt at the right time'*.

Chapter Two: The Capital Market in Bangladesh

2.0. Introduction:

No economy can flourish unless an environment conducive to growth is provided (DSE Annual Report 1998). Historically and empirically, positive correlation exists between health of the economy and capital market which simply implies that changes in the capital market affect the economy and more obviously changes in economy affect the market. The activities of buying and selling of shares on the market are extremely important for the allocation of capital within economies. In a capital-starved country like Bangladesh, effective allocation of scarce resources is of vital importance.

The major objectives of this chapter are twofold: *one*, to provide a brief description of the capital market in Bangladesh, and *two*, to discuss the performance of the capital market in Bangladesh in comparison to developed, emerging, and regional markets. For these purposes, this chapter basically focuses on the major aspects of the capital market in Bangladesh in relation to the main issues of this study and specially in relation to the dividend policy. However, to view the overall position of the capital market in Bangladesh in comparison to the world capital markets, this chapter also provides a brief comparison and discussion of the capital market in Bangladesh with developed, emerging, and regional markets and specific reference to dividend policy. The rest of the chapter is divided into four sections. A brief description of the capital market in Bangladesh along with the growth and development of the capital market in Bangladesh incorporates in section 2.1. Section 2.2 discusses the regulatory framework of the capital market in Bangladesh and its drawbacks. The impact of taxation policy changes on the dividend policy of the capital market in Bangladesh in comparison to world capital markets incorporates in section 2.3. Section 2.4 includes the overall performance of the capital market in Bangladesh in comparison to developed, emerging, and regional markets and specially in connection with the main issues of this study. Finally, section 2.5 includes the summary and concluding remarks.

2.1. The Capital Market in Bangladesh:

Efficiency is the prime consideration in the economic growth process under a free enterprise system. Bangladesh Government is now set for liberalisation and privatisation. An efficient capital market is of paramount importance in this process. Capital market in Bangladesh is at its infant stage and the public issues of corporate units are limited.

The stock market is a pivotal institution in the financial system of a country. The stock exchanges are recognised by the government and function within the purview of the Securities Exchange Ordinance and related bye-laws and regulations. Presently, there are two stock markets in Bangladesh, one in Dhaka entitled Dhaka Stock Exchange (DSE) and the other in Chittagong namely Chittagong Stock Exchange (CSE) are in operation. The Securities and Exchange Commission (SEC) was established under the SEC Acts 1993 as a central regulatory agency overseeing the activities of the entire capital market including issue of capital, monitoring the issue of stocks and operation of the stock markets including regulating of portfolio market. The SEC has also a mandate to protect the interest of investors in order to speed up the industrialization process, and to this end, new measures are underway to strengthen the role and capability of the SEC.

Total listed issues in the Dhaka Stock Exchange are 223 of which 203 are shares, 11 debentures and 9 mutual funds. The number of the listed companies in the Chittagong Stock Exchange are 131 with 9 Mutual funds and 4 debentures. Investment Corporation of Bangladesh (ICB) is the public sector player in the capital market. Both the Stock Exchanges have gone for automation in 1998. Currently, Merchant Banks Research institutions are in operation in stock markets (The DSE and CSE Annual Reports 1998).

2.1.1. Growth and Development of the Capital Market in Bangladesh:

Capital Market of Bangladesh was in a dormant stage during the decades of sixties, seventies and early part of eighties. During this period, few companies accessed in capital market and investors were not interested or familiar in corporate securities. The market registered an impressive growth particularly from late eighties to mid-nineties.

The origin of the stock market in Dhaka goes back to 1954 when a Stock Exchange was formed in Narayanganj. Later in 1958 the Stock Exchange was transferred to Dhaka. The Companies Act 1913 and the Capital issues (Continuance of Control) Act 1954 were two pieces of legislation governing the stock market in the country. Later, the Securities and Exchange Ordinance was promulgated in 1969. This ordinance required the companies to take permission from the Controller of Capital Issues (CCI) for issuing capital and making public offer of securities. It also required the companies to submit annual reports and to provide information as required. In addition, this ordinance required the stock exchange to take registration from the CCI.

The capital market in Bangladesh made significant progress until the independence of the country. However, the post liberation nationalisation of industries and socialistic policies of the government left no choice but to suspend the operation of the Dhaka Stock Exchange. The era of opening up the economy began in 1976 and the operation of the Exchange resumed in that year. The Securities and Exchange Rules 1987 defined more than one decade after the resumption the stock market, disclosure requirements by the company. Although the CCI was responsible for monitoring the securities market, in practice it failed to do so partially because of lack of necessary powers. In spite of the existence of legislation, many companies did not behave properly to serve the interest of the investors. Delayed holding of annual general meeting, delayed payment of dividend and refund warrants, lack of timely reporting and non-compliance with disclosure requirements were common experiences. This era ended with the adoption of the Securities and Exchange Commission Act in 1993. By this major piece of legislation, the Securities and Exchange Commission (SEC) came in existence to monitor the securities market and to protect the interest of the investors. At the same time, the Securities and Exchange Commission (Amendment) Act 1993 repealed the Capital Issues Act. The formation of Securities and Exchange Commission brought the listed companies under the supervision of SEC. With its power to make regulations, the SEC promulgated two pieces of regulations, namely, the Securities and Exchange (Brokers, Dealers, Sub-Brokers) Regulation 1994 and the Securities and Exchange (Insider Trading) Regulation 1994. Two other regulations for merchant bankers and portfolio managers and for mutual funds are in progress. Another major

development in the legislation was the enactment of the Companies Act 1994 (see www.secbd.org).

The Dhaka Stock Exchange in the independent Bangladesh began its journey in 1976 with only 9 companies. The nationalisation of the major local companies after independence left little scope for the development of the stock market at that time. The number of listed securities grew at a slower rate during the period 1976 through 1982. At the end of 1982, the number of listed companies were only 29. But the growth in the number of listed companies was relatively higher during the period 1983 through 1988. After 1988, the growth in number of listed securities slowed down somewhat. By the end of 1993, the number of listed securities stood at 132. A good number of new public issues were made during 1994 and the number of listed securities increased to 150 by the end of 1994 and to 209 by the end of 1997 (DSE Annual Reports 1976-98).

The country's second stock market was formed in the second biggest city of Bangladesh in Chittagong in 1995. That was really the growing demand for the people of Bangladesh and incorporation of the Chittagong Stock Exchange (CSE) was the right decision of the Government to fulfil the excess demand of the people. The CSE is conducted by Computerised Automated Trading System like the DSE and the CSE is also a self-regulated private sector company which must have their operating rules approved by Securities and Exchange Commission (SEC). The Chittagong Stock Exchange started its operation with 72 listed companies in 1995 and stands at 138 in 1997 (CSE Annual Reports 1995-98).

The growth in market capitalisation was also relatively slow from 1976 through 1982. By the end of 1982, the market capitalisation stood at Taka[1] 812 million. The new issue of securities and the growth of market capitalisation gained some momentum after 1983. The year 1987 experienced a relatively big rise in market capitalisation with 92 listed companies. The rise of market capitalisation in 1987 has been attributed partially to the overreaction in the market. The unusual overreaction appears to have been responsible for a subsequent decline in market capitalisation in the next two years after 1989. It took another two years to recover from the decline in market capitalisation. Another possible reason for the decline of the market during 1989

through 1991 was a decline in investors' confidence because companies did not comply with timely holding of annual general meetings, timely payment of dividends and refund warrants, and disclosure requirements, etc.

The year 1994 was remarkable for the capital market in Bangladesh, which experienced a significant growth in terms of market capitalisation, transaction volume and number of new issues. The significant growth of the securities market in Bangladesh in 1994 has been attributed to three major factors. *First*, the liberalisation in the foreign exchange policy and Taka convertibility made the way for foreign portfolio investment giving a large boost to the demand side. It has been estimated that the foreign portfolio investors in the Bangladesh stock market have invested a total of Taka 6800 million by the end of 1994. *Second*, the monitoring of the companies and stock exchange by the Securities and Exchange Commission (SEC) restored investors' confidence in the market. *Third*, the willingness of potential companies to make public issue and relatively relaxed policy of pricing initial public issues gave boost to new issues in the market. In this year, public issue of 29 securities (including 4 debentures) was made, market capitalisation rose by more than 100 percent and there was a tremendous increase in the volume of transaction. By the end of 1994, the market capitalisation stood at Taka 41,771 million. The transaction value in 1993 was Taka 580 million, which jumped to Taka 4290 million in 1994. The increase in the volume of transactions is not merely due to the increase in market capitalisation, but also due to a significant increase in the depth and breadth of the market. This is evident in the sharp rise in the ratio of transaction volume to market capitalisation. In 1993, the ratio was only 3.30 percent, which increased to 10.26 percent in 1994. The depth and breadth of the market, however, has still to develop substantially to improve efficiency. The market capitalisation of the Dhaka Stock Exchange stood to Taka 50211 million in 1995 and increased to Taka 71255 million in 1997. While the price-earning ratio of the Dhaka Stock Exchange in 1986 was only 6.8, it jumped to 20.6 and 23.9 respectively in 1987 and 1989, and to 40.0 in 1996 but fall to 11.32 in 1997. However, the second capital market of Bangladesh (CSE) earned the market capitalisation of 23959.2 million Taka in the year of commencement but that stood to Taka 52435.6 million in 1997 (DSE Annual Reports 1976-98 and CSE Annual Reports 1995-98).

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[1] Taka 80 = £1.

However, the market continues with the steady growth to achieve the target until June 1996. After the general election in June 1996, the market witnessed the biggest ever boom. Large number of investors entered the capital market. The new issues multiplied and speculative fever gripped the market. Trading volume rose sharply and indexes reached at 3648 points on 14th November 1996. Price Earning Ratio soared and shares were traded at 80 times. On the other hand, at the same time the Chittagong Stock Exchange gained approximately 1057% in only one-year time. In November 1996, the inevitable happened and the market crashed. In a span of twenty months, the DSE index has come down to 650 points in June 1998. Now, the drama is over and the market is passing through a process of consolidation. Fundamentals and rationality have replaced speculations and rumours. Regulations have become more comprehensive. The capital market in Bangladesh is now poised to achieve higher degree of maturity. And, as the market matures, a more meaningful risk return parity will emerge (Table 2.1 and Table 2.2).

2.2. Regulatory Framework and Its Drawbacks

Certain rules and regulations as elsewhere govern the securities market in Bangladesh. Regulatory authorities of the capital market in Bangladesh consists of Securities and Exchange Commission (SEC formerly CCI), Registrar of Joint Stock Companies (RJSC), DSE, and CSE. Securities and Exchange Commission is under the Ministry of Finance and the RJSC is under the Ministry of Commerce. On the other hand, DSE and CSE are the corporate bodies under the Companies Act 1913. The RJSC partially implements the Companies Act 1913.

The Controller of Capital Issues (CCI) operated under the Capital Issues (Continuous of Control) Act 1947. Under this Act the Government gives consent, based on certain documents, to the issue of any security. The Securities and Exchange Ordinance of 1969 and Securities and Exchange Rules 1987 (SER 1987) are also implemented by the SEC to regulate the securities market and the dealings in securities. These provide protection to investors, and regulate the securities market as a whole. The Ordinance establishes listing procedures regulates insider trading, prohibits fraudulent act, false statement, etc. However, no definite mechanism as regards monitoring and implementation of the above provisions was spelt out. Even the provision in the Securities and Exchange Rules 1971 to constitute a Securities and

Table: 2.1: Trading Characteristics of the Capital Market in Bangladesh:

Trading Characteristics	Dhaka Stock Exchange	Chittagong Stock Exchange
Date of Incorporation	April 28, 1954	April 01, 1995
Previous Names	East Pakistan Stock Exchange Ltd.	-
Commencement of Formal Trading	1956	October 10, 1995
Trading Suspended	1971 during and after liberation war	-
Trading Resumed	1976 with 9 listed companies	-
Number of Members	195	124
Active Securities	Average 150	Average 50
% of Brokerage	1% (Maximum)	1% (Maximum)
Operation Time	10:30 AM to 5:00 PM (Weekdays)	10:30 AM to 5:00 PM (Weekdays)
Trading Method	Trading at DSE is done on an Automated Order Matching System	Trading at CSE is done on an Automated Order Matching System
Types of Securities Traded	Shares, Debentures, and Mutual Funds	Shares, Debentures, and Mutual Funds
Taxes on Transactions	None	None
Number of Shareholders	300,000 (approximately)	-
Market Capitalisation as % of GDP	5.00% (approximately)	-

Source: www.secbd.org

Table 2.2: Growth and Development of the Capital Market in Bangladesh (in millions):

Title	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
No. of listed companies										
DSE	93	105	116	120	128	132	150	175	191	209
CSE	-	-	-	-	-	-	-	72	117	138
Market Capitalisation (in Taka)										
DSE	13557	15351	11486	10397	12299	18099	41770	50211	168106	71255
CSE	-	-	-	-	-	-	-	23959.2	53210.9	52435.6
Market capitalisation (In US$)										
DSE	430	476	321	269	314	453	1049	1255	4110	1668.75
CSE	-	-	-	-	-	-	-	596	1301	1228
Trading value (in Taka)										
DSE	130	174	195	116	438	579	4284	4660	30137.11	174046.68
CSE	-	-	-	-	-	-	-	.74	30.49	
Trading value (in US$)										
DSE	4.1	5.4	6.0	3.2	11.2	14.6	106.5	116.5	717.55	3829.41
CSE	-	-	-	-	-	-	-	0.018	0.75	-
Turnover Ratio (DSE)	1.0	1.2	1.5	1.1	3.9	3.8	14.3	13.3	29.6	12.8
CSE Index	-	-	-	-	-	-	-	100	1157	333
DSE Index	533.6	467.8	350.8	296.3	369.6	391.8	845.6	834.7	2300.1	756.8
% of changes in Index										
DSE	-	-12.33	-25.01	-15.54	24.74	6.01	115.82	-1.29	175.56	-67.10
CSE	-	-	-	-	-	-	-	-	1057	-71.22

Source: The Annual Reports of the DSE (1988-98) and CSE (1995-98).

Exchange Authority of Bangladesh was omitted in SER 1987. In the absence of any definite authority for implementing the rules and regulation, securities market practically became nobody's business causing, inter-alia, improper trading, insider trading, fictitious trading, sleeping brokers, creative reporting and delayed reporting. However, recently SEC 1993 has been framed to supervise the securities market of Bangladesh. The companies Act 1913, which did not see any material change since 1936, appears to be weak in protecting the investors' interests. The time limit for allotment of shares and debentures after the issuance of prospectus, for issuance of share or debenture certificates, for registration of transfer of shares and debentures, for presentations of accounts and for holding of AGM after the last AGM within 180 days, 3 months, 9 months and 15 months respectively is too long compared to those of other countries like India, Pakistan, Sri Lanka, US, and UK. Besides, the Act is silent about the time limit for refund of excess application money and for payment of dividend.

Experts' reports on capital market in Bangladesh (Ahmed, Khan, and Islam, 1993) had recommended alterations; modifications and changes of these regulations. In Bangladesh, the regulatory framework is rather weak. The more striking is that the existing regulations are not implemented properly. The office of the RJSC, which implements the companies Act 1913, is incapable of enforcing the law because the professionals do not staff it. Consequently the law is simply ignored by companies. Allegations are found about non-holding of general meetings, regularly non-payment of dividend in time, irregular publication of financial statements, delay in disbursement of excess application money and so on. These are all against the interest of investors and thereby undermine investor confidence in the securities market.

The DSE and CSE, which are self-regulating, have their own listing rules. As we know that self-regulatory stock exchange generally creates the possibility of broker-favoured bias, abuse of the system and exploitation of loopholes between various laws (Agtmael, 1984). Corporate listing with the DSE and CSE, in many cases, is influenced by the requirement of the regulatory authorities or the financial institutions, which impose listing requirement as a condition for getting credit attaching lesser importance to the other benefits of stock listing. However, there is some weakness in its regulatory framework regarding methods of trading, protection of customers and conduct of members. The security exchanges have their own listing

rules, but they are generally outdated, and lacks objectivity and detailed provisions for listing and administration of listed stocks. The DSE and the CSE do not ensure disclosure of information on listed companies in order to protect the interest of investors. It does not enforce disciplinary regulations so that the violation of rules and regulations is minimized.

The Securities and Exchange Commission (SEC) is a government body under the Ministry of Finance. It is the successor of the office of the Controller of Capital Issues (CCI). The Controller of Capital Issues had the responsibility of controlling the stock market. Prior to the establishment of SEC, indiscipline in the stock market was prevalent. Many companies failed to hold AGMs within time requirements, pay dividends on time, delivery the refund warrants on schedule and meet the disclosure requirements as prescribed by the law. The CCI could not curb the indiscipline in the market partially because it did not have necessary power to do so. In this backdrop, the formation of a body to regulate the stock market with appropriate power and authority became an utmost necessity. The establishment of the Securities and Exchange Commission in 1993 was a significant step to this end.

The laws and regulations pertaining to the supply of securities in the market are the Securities and Exchange Commission Act 1993, the Securities and Exchange Commission (Amendment) Act 1993, the Companies Act 1994, the Securities and Exchange Ordinance 1969, the Securities and Exchange Rules 1987, the Securities and Exchange (Brokers, Dealers and Sub-Brokers) Regulations 1994, the Securities and Exchange (Insider Trading) Regulations 1994 and the Dhaka Stock Exchange and Chittagong Stock Exchange Listing Rules and bye-Laws.

Although there are the specific regulations of the SEC regarding the brokers, dealers, and insider trading, the insiders, exchange employees and brokers are engaged with the speculations of the markets whereas the SEC is simply not capable to control all of these affairs perfectly that is why Government was bound to take action against the speculators, which causes a big mess in the market in 1996-97 (Emerging Stock Market Factbook 1998). However, as we know that the exchanges are self-regulated which is the basic obstacle of the controlling system of the capital market in Bangladesh. Even though the SEC introduced different Laws but failed to implement

perfectly in the market because both the exchanges and SEC failed to work together in many occasions.

2.3. Tax System and Its Impact on the Dividend Policy of the Capital Market in Bangladesh:

The process of economic liberalisation in Bangladesh started in 1976. As a part of this process, the Dhaka Stock Exchange resumed its operation. Since then, Bangladesh Government took different initiatives and gave different incentives (e.g., corporate tax incentive) to encourage the supply side of the stock market. The corporate tax rate was 40% in 1990, which is reducing now days by the government of Bangladesh to encourage the companies to pay more dividends. However, in FY1998-99 Government introduced lowest corporate tax ever in Bangladesh history and the same corporate tax is applicable for all listed companies (35%), which is a very big initiative by the Government and also a big drive for the companies to take more suitable financing, investment, and dividend decisions. On the other hand, the corporate tax rates of Australia, Canada, China, Egypt, India, Malaysia, UK, US, and Zimbabwe are 70.9%, 59.3%, 49.8%, 26.4%, 18.6%, 42.5%, 43.2%, 56.1%, and 49.7% in 1990 and 72.8%, 59.3%, 7.8%, 34.4%, 33.2%, 44.4%, 41.8%, 59.5%, and 48.2% in 1999 (World Development Indicators 2001).

Bangladesh Government introduced exemption of income tax on dividends income up to a certain limit (e.g., Taka 60,000 in FY1996-97). However, individual shareholders used to get an exemption of total income for tax purpose up to a certain limit and the rest of the income used to taxed based on individual's slab of income (e.g., basic rates were in between 10%-15% and the maximum rate was only 25% in FY1996-97). On the other hand, in case of capital gain taxation, if the capital gain arises within five years from the acquisition of the capital assets then capital gains used to taxed at 15% (lower rate) and 25% (higher rate); and if the capital gain arises after five years of the acquisition of the capital assets then the capital gain used to taxed at 15% (FY1996-97). In addition, Bangladesh Government changed the tax policy of dividend income in FY1998-99 and introduced flat rate of tax on dividend income irrespective of the slab of income. It is said that in respect of dividend income derived by individual tax payers, the tax will be deducted at source at the rate of 10 percent on the amount of dividend and this will be treated as the final settlement of tax liability

(Finance Minister's Budget Speech 1998-99). This type of flat rate on dividend income is an another boost for the individual shareholders to prefer dividends to capital gains. One the other hand, the tax rates on dividend and capital gains of Canada, Denmark, France, Indonesia, New Zealand, Norway, Pakistan, Thailand, UK, and US are 59.3%, 43.5%, 18.7%, 65.4%, 62.2%, 21.7%, 12.8%, 26.2%, 43.2%, and 56.1% in 1990 and 59.3%, 43.1%, 20.9%, 67.4%, 65.5%, 25.6%, 27.8%, 33.3%, 41.8%, and 59.5% in 1999 (World Development Indicator 2001). Therefore, it is clear that Bangladeshi companies and investors are enjoying absolute advantage and they are also quite benefited for the encouraging taxation policy of Bangladesh Government in comparison to other economies.

2.4. Performance of the Capital Market in Bangladesh:

2.4.1. Developed Markets vs. Bangladesh

The number of companies listed on the capital market in Bangladesh are very insignificant in comparison to the developed markets. There were only 134 companies listed in the capital market in Bangladesh in 1990 whereas 6599 companies were listed in US market and 1701 companies were listed in UK market. However, the listed companies increased to 224 in 2000 in Bangladesh, which is completely insignificant compared to 7651 in US and 1945 in UK. The market capitalisation of Bangladesh was only US$0.341 billion in 1990 whereas US$3059.434 billion in US and US$848.866 billion in UK. However, the capitalisation of the capital market in Bangladesh increased to US$1.66 billion in 1997, which is also very insignificant in comparison to US$11308.779 billion in US and US$1996.225 in UK. Furthermore, the turnover ratio of Bangladesh market was only 1.5% in 1990 whereas 53.4%. in US and 33.4% in UK. The turnover ratio of Bangladesh market increased to 12.6% in 1997, which is also quite insignificant compared to 103% in US and 44.4% in UK (World Development Indicator 2001).

Even though the capital market in Bangladesh is not too impressive in connection with size and transaction volume but it is one of the best performers in the world capital markets in the last few years (e.g., 1994 and 1996). Bangladeshi market gained 115.8% in 1994 whereas both US and UK markets lost 2% and 5.2% respectively. However, Bangladesh market lost 17.5% in 1999 and gained 28.5% in 2000 whereas both US and UK markets gained 19.5% and 14.5% respectively in 1999 and both of them lost 10.1%

and 10.2% respectively in 2000 (Emerging Stock Market Factbook 1995-98, World Development Indicator 2001).

The pay-out ratio is very attractive in Bangladesh. The dividend yield in Bangladesh was 7% in 1988, which is almost double in comparison to US (3.82%) and UK (4.58%). The dividend yield increased to 7.7% in Bangladesh in 1991, which is also double the amount of US (3.15%) and UK (5.11%). However, the dividend yield of Bangladesh market reduced to 5.7% in 1994 and to 5.37% in 1997, which is not even worse than US (2.87% and 1.73%) and UK (4% and 3.49%). Therefore, although the capital market in Bangladesh is very small in size we see that the performance of Bangladesh market and pay-out ratio is appreciating in comparison to US and UK markets (Emerging Market Factbook 1995-98, and World Development Indicator 2001).

2.4.2. Emerging Markets vs. Bangladesh

Emerging equity markets have long been characterised as having higher risk but also higher return than developed equity markets. Since 1991, most investors in these markets have focused primarily on the high returns available; 1994 will be remembered for refocusing investor attention on the risks. That was a year in which many emerging markets experienced dramatic price swings and most markets ended the year at lower levels. Nonetheless, 1994 was also a year of substantial progress in emerging markets, with important advances made in their transaction efficiency, effectiveness as capital rising mechanisms, and in the introduction of sophisticated investment techniques.

Despite the roller-coaster performance of emerging markets occasioned by sharp sell-off and frequent bad news, the broad IFC Global (IFCG) Composite Index, representing returns for 1,266 stocks from 24 emerging markets, fell just over 2% in dollar terms in 1994. The IFC Investable (IFCI) Composite Index, which measured the returns from 890 emerging market stocks eligible for foreign portfolio investment and therefore reflecting foreign investor reactions more directly fell substantially more, losing 13.8% for the year. All of the IFC's regional indexes also suffered declines in 1994, though there were specific periods in each region when losses tended to accumulate. The bottom fell out of virtually all-emerging markets for investors with

Mexico's severe peso devaluation on December 20, 1994 (Emerging Stock Market Factbook 1995).

Nonetheless, many emerging markets experienced quite strong returns in 1994 and were the best performing markets at the global level. At year-end, out of the 20 best performing equity markets in the world, 19 were emerging markets. It is interesting to note that the leaders among these top markets were typically smaller, "pre-emerging" markets most of, which are not currently included in any of the leading indexes. Kenya, for example, topped the list with a 179% increase over the year, followed by Egypt, Bangladesh, and Tunisia, which each increased well over 100%. Among the major emerging markets, Brazil was up by 65% in the dollar terms as measured by its IFCI index, followed by Peru (up 47%), and Chile (up 42%) (Emerging Stock Market Factbook 1995).

However, in a pattern now familiar to emerging market investors, emerging markets also constituted eight of the ten worst performing markets in 1994. Indeed, some of the markets that were among the top performers in 1993 were some of the world's worst performers in 1994. In dollar term, Turkey was down by 43%, Poland by 43%, and Argentina and Mexico by 42% on their IFC indexes (Emerging Stock Market Factbook 1995).

Emerging stock markets had a difficult year in 1995. The IFC Investable Composite Index (IFCI Composite), which tracks share prices for 1,200 stocks in 26 emerging markets that are open to foreign investors around the world, registered an overall decline of 10.3%, while the broader IFC Global (IFCG) Composite Index, with over 1,600 stocks from 27 markets, lost 13.9% (Emerging Stock Market Factbook 1996).

For the year, IFCI Latin America Index and IFCI Asia Index dropped 19% and 7% respectively, while the IFCI Europe/Mideast/Africa (EMEA) Index soared 20%, thanks largely to solid gains in the heavily weighted IFCI South Africa Index (Emerging Stock Market Factbook 1996).

The top performers of the emerging markets in 1995 are South Africa (14.9%), Zimbabwe and Jordan respectively (10.6%), Indonesia (9.9%), Peru (9.3%), and Argentina (8.7%). And the top five losers of the emerging markets in 1995 are Sri Lanka (39.6%), India (35.2%), Pakistan (32.6%), Venezuela (31.7%), and Taiwan (31.5%). However, Bangladesh lose only 1.3% in 1995 (Emerging Stock Market Factbook 1996).

Emerging stock markets posted their first positive collective return since the boom of 1993, as measured by the IFC Global (IFCG) and Investable (IFCI) Composite indexes. The IFCG Composite Index rose about 5.8% during 1996. It is the broadest indicator of emerging stock market performance available, covering 1,779 stocks in 27 markets during 1996. The IFCI Composite Index, with 1,224 stocks in 26 markets, is the broadest index available, designed to measure returns on emerging market stocks that are legally and practically open to foreign portfolio investment, and is a widely-used benchmark for international portfolio management purposes. The IFCI Composite gained 6.75 in 1996 (Emerging Stock Market Factbook 1997).

On a regional basis, the largest gain came in Latin America. The IFCI Latin America Index was up 14% in 1996, followed by an 8.9% gain in the IFCI Asia Index, and a loss of about 5.2% in the IFCI Europe/Mideast/Africa Index (Emerging Stock Market Factbook 1997).

While share price performance in most emerging markets was positive, individual performance among the emerging markets in 1996 was as diverse as the features of the markets themselves. As in many years past, emerging markets could be found both at the top and bottom of the list of the world's best performing stock markets. For instance, emerging markets swept the top 15 spots for annual performance measured in dollar terms, from a list of 76 world stock markets. Only Spain and Sweden from the developed markets made the top 20 on this list, which included 54 markets from developing countries and 22 from developed countries. The top five performers for 1996 were Bangladesh (up 196%), Russia (up 156%), Venezuela (up 132%), Hungary (up 95%), and China (up 89%). It is noteworthy that the largest gains tended to come from some of the smaller, less-known emerging markets not contained in any index

producer's composite index, though the relatively large Taiwanese market made 18th on the list with a 36% increase (Emerging Stock Market Factbook 1997).

The worst performing markets were also concentrated in emerging markets. Twenty-one world equity markets dropped in price in 1996, of which 19 were emerging markets. Bulgaria was nearly wiped out as stock prices continued to post losses in dollar terms after trading was suspended from September 1996, in light of radical currency devaluation. As a consequence, the IFCG Bulgaria Index lost nearly 83% over the course of 1996, making it the world's worst performing stock market in 1996. Large emerging markets like Korea, Thailand, and South Africa also suffered heavy losses, with their IFCI indexes falling 39%, 38%, and 19% for the year in reaction to domestic economic problems (Emerging Stock Market Factbook 1997).

Emerging markets' performance was mixed in 1997, with steep losses in Asia and strong gains in Latin America highlighting some of the disparities in emerging market equity performance. Overall, markets performed poorly in 1997, with the IFC Investable Composite Index (IFCI) falling more than 16%, the sharpest one-year decline in the index's 10-year history. The sharp 57% fall in the IFCI Asia Index easily outweighed the 10% rise in the IFCI Europe/Mideast/Africa (EMEA) Index and the nearly 26% rise in the IFCI Latin America Index. The 32-market IFC Global (IFCG) Composite Index posted similar results to the IFCI Composite Index. The IFCG Asia Index fell 44%, less than IFCI Asia, largely due to strong gains in Chinese A-shares, which are not open to foreign investment. In contrast to emerging market returns, the U.S. S&P 500 surged 31 % for the year, beating all but eight of the 32 IFCG market indexes. Other developed stock market returns, with the exception of those in Asia, were generally strong across the board (Emerging Stock Market Factbook 1998).

The top performers of emerging markets in 1997 are Russia (142.8%), Turkey (109.9%), Trinidad and Tobago (109.3%), Botswana (99.8%), and Hungary (60.9%). The top five losers of emerging markets in 1997 are Thailand (80%), Indonesia (74.1%). Malaysia (72.3%), Bulgaria (70.5%), and Korea (69.4%). However, Bangladesh were the 6th losers in 1997 by declining 67.7% (Emerging Stock Market Factbook 1998).

Although there were only 93 companies listed in the Bangladesh capital market in 1988, which is not too bad in comparison to other emerging markets, for example, 205 in Chile, 483 in Egypt, 102 in Nigeria, 50 in Turkey, and 53 in Zimbabwe. However, the listed companies increased in Bangladesh to 128 and to 209 in 1992 and 1997 respectively, which are pretty good compared to 245 and 295 in Chile, 656 and 650 in Egypt, 153 and 182 in Nigeria, 145 and 257 in Turkey, and 62 and 64 in Zimbabwe. Bangladesh achieved 87th position in the world ranking of the average company size whereas Nigeria ranked 79th, Zimbabwe 74th, Egypt 71st, Turkey 37th, and Chile 39th in the world average company size in 1997 (World Development Indicator 2001).

Furthermore, the market capitalisation of Bangladesh was only US$430 million in 1988 whereas the market capitalisation of Chile, Egypt, Nigeria, Turkey, and Zimbabwe were US$6849 million, US$1760 million, US$960 million, US$1135 million, and US$774 million respectively. The market capitalisation of Bangladesh market increased to US$314 million in 1992 and to US$1668.78 million in 1997 whereas the market capitalisation of Chile, Egypt, Nigeria, Turkey, and Zimbabwe were US$29644 million and US$72046 million, US$3259 million and US$20830 million, US$1221 million and US$3646 million, US$9931 million and US$61090 million, US$628 million and US$1969 million respectively in 1992 and 1997 (World Development Indicator 2001).

In addition, the value traded of Bangladesh was only US$4.1 million in 1988 whereas the value traded of Chile, Egypt, Nigeria, Turkey, and Zimbabwe were US$610 million, US$60 million, US$5 million, US$101 million, and US$39 million respectively. The value traded of Bangladesh market increased to US$11.2 million in 1992 and to US$3829.41 million in 1997 whereas the value traded of Chile, Egypt, Nigeria, Turkey, and Zimbabwe were US$2029 million and US$7445 million, US$195 million and US$5859 million, US$14 million and US$132 million, US$8191 million and US$59105 million, US$20 million and US$9 million respectively in 1992 and 1997. However, Bangladesh achieved 12.6% turnover ratio and got 60th position in the world stock market turnover whereas Turkey achieved 129.7% and got 7th position, Egypt achieved 33.5% and got 46th position, Zimbabwe achieved 19% and got 54th

position, and Chile achieved 10.8% and got 61st position in 1997 (World Development Indicator 2001).

The pay-out ratio in the capital market in Bangladesh are excellent in comparison to other emerging markets. The dividend yield was 5.7% in Bangladesh in 1994, which is many times better in comparison to Indonesia 1.5%, China 2.3%, Philippines 0.4%, and Taiwan 0.7%. However, the dividend yield of Bangladesh reduced a little bit to 4.85% in 1995 and increased to 5.37% in 1997 but still kept the same position in the world emerging markets whereas the dividend yield of Indonesia, China, Philippines, and Taiwan were 1.5% and 2.9%, 3.2% and 1.3%, 0.6% and 1.4%, and 1.2% and 0.6% in 1995 and 1997 respectively (World Development Indicator 2001).

Therefore, it is also clear from this part that the position of the capital market in Bangladesh is very good in comparison to all other emerging markets in all respects.

2.4.3. Regional Markets vs. Bangladesh

The stock market in Bangladesh has grown enormously during the last few years. But the size of the market is very small compared to the size of the other Asian emerging markets. The total market capitalisation of Bangladesh was US$ 1.049 billion in 1994 compared to US$ 127.515 billion in India, US$ 12.263 billion in Pakistan, $191.778 billion in South Korea and $199.276 billion in Malaysia. However, the Bangladesh stock market is also very small compared to the size of the economy. The market capitalisation in Bangladesh was only 4.07 percent of GDP in 1994, as against 25.77 percent in Pakistan, 24.03 percent in Sri Lanka, 104.14 percent in Thailand and 294.56 percent in Malaysia. Although the market capitalisation of Bangladesh stock market increased to US$ 4.551 billion in 1996, which was approximately 15% of GNP of Bangladesh but that is still very low in comparison to the other regional countries (Emerging Stock Market Factbook 1995-98).

Two other features of the underdeveloped stock market in Bangladesh are less liquidity of the market and smaller size of companies. Both of these two indicators improved significantly in 1994, but did not reach the level of other emerging markets. The turnover ratio, a measure of liquidity of the market, was 14.3 percent for

Bangladesh in 1994, compared to 24.1 percent in India, 26.9 percent in Pakistan, 60.9 percent in Thailand, 58.7 percent in Malaysia and 174.1 percent in South Korea. However, the turnover of Bangladesh market drops to 12.6% in 1997 compared to 43.0% in India, 106.2% in Pakistan, 37.5% in Thailand, 73.4% in Malaysia, and 188.4% in South Korea (Emerging Stock Market Factbook 1995-98).

The average size of companies in Bangladesh was only US$ 6 million at the end of 1994 and increased to US$ 7.5 million at the end of 1997 in terms of market capitalisation. Bangladesh ranked 77th in 1994 and 87th in 1997 by average size of companies among 82 stock markets listed by IFC in 1994 and 96 stock markets listed by IFC in 1997. On the other hand, the average company size for Malaysia was US$ 132.2 million, South Korea US$ 54.0 million, India US$ 22.0, Pakistan US$ 14.0, and Sri Lanka US$ 8.8 million and ranked 41^{st,} 57th, 78th, 81st, and 84th respectively by IFC in 1997 among the 96 stock markets. Therefore, turnover ratio and company size indicate that Bangladeshi capital market's position is not too bad compared to other Asian markets (Emerging Stock Market Factbook 1995-98).

The annual change in stock price index was significant despite decline in price indices in most of the South Asian markets. The stock price index in Bangladesh rose by 115.8 percent in 1994 and rose by 196% in 1996. However, Bangladesh ranked as the top five performers by the change in price index amongst 76 countries in 1996 by IFC. On the other hand, the stock market index in India rose by 8.6% and declined by 2.7%, Malaysia declined by 23.8% and rose by 24.4%, Pakistan declined by 5.3% and 9.6%, Sri Lanka declined by 0.3% and 9.4%, Thailand declined by 19.2% and 5.4%, and South Korea rose by 18.6% and declined by 26.2% in 1994 and 1996 respectively. However, the Bangladesh stock market massively crashed in 1997 by losing 67% of its stock market index. In contrast, Indian market gained 16%, Malaysian market lose 52%, Pakistani market gained 28.9%, Sri Lanka market gained 19%, Thailand market lose 55.2%, and South Korean market lose 42.2% (Emerging Stock Market Factbook 1995-98).

The price earning ratio in Bangladesh was only 10.1 in 1994 compared to 17.6 in Sri Lanka, 23.3 in Pakistan, 26.7 in India, 34.5 in Korea and 29 in Malaysia. However, the price earning ratio in Bangladesh increased to 13.5 in 1997 compared to

11.7 in Sri Lanka, 14.8 in Pakistan, 15.2 in India, 17.9 in Korea and 9.5 in Malaysia (Emerging Stock Market Factbook 1995-98).

As it has already been mentioned earlier that the pay-out ratio is extraordinary in Bangladesh in comparison to any capital markets. The dividend yield was 5.7% in Bangladesh in 1994, which is many times better in comparison to India 1%, Pakistan 1.6%, Korea 1.3%, Malaysia 1.8%, Thailand 2%, and Sri Lanka 1.7%. However, although the dividend yield of Bangladesh reduced a little bit to 5.37% in 1997, which kept the position of Bangladesh almost at the same level except the few whereas the dividend yield of India 1.8%, Pakistan 3.2%, Korea 3%, Malaysia 4%, Thailand 7.7%, and Sri Lanka 2.6% (Emerging Stock Market Factbook 1995-98).

Therefore, this part also gives the same conclusion that although the capital market in Bangladesh is small in size but Bangladesh are still performing very fine in comparison to the regional markets.

2.5. Conclusion:

Bangladesh still has potential for substantial rise in stock price and because of relatively lower stock price, the investments produce high dividend yield in the capital market in Bangladesh. However, Bangladesh market also showed signs of increasing maturity in terms of capital raising power. Almost all shares floated in the market were overwhelmingly subscribed. The most impressive side the capital market in Bangladesh is that even though the share price fell at times, aggregate value traded continued to rise with even rising market capitalisation.

However, because of exemption of tax on dividend income and income tax incentives and high return level against the backdrop of low interest rate, local investors have involved themselves heavily in the securities market. Huge idle money is being geared to the stock exchanges making the securities market more liquid and vibrant than before. Moreover, Government is considering more augment steps to make the securities market vibrant as it has already established itself as the most significant tool for the country's private sector development initiatives.

The capital market in Bangladesh successfully faced the aftermath of the Mexican crash and despite a huge off load of shares by foreign investors, the market did not collapse, rather its trading volume increased in multiple effect absorbing almost all those off loaded shares by the local investors. Although Seok and Park[2] (1992) explain the underdeveloped nature of stock market of Bangladesh but the scenario has changed in couple of years. As we have observed from the past experience that Bangladesh market outperformed in 1994 and 1996. In both of the years Bangladesh market performs best among the world capital markets. Therefore, it is quite clear that although the capital market in Bangladesh is very small in size and really a baby in the list of capital markets but they are working very fine in comparison to the world capital markets (developed, emerging, and regional).

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[2] Seok and Park presented a comparison of the stock market statistics for Bangladesh with four selected South East Asian countries.

Chapter Three: The Dhaka Stock Exchange: An Introduction

3.0. Introduction:

As a member of the emerging markets, the Dhaka Stock Exchange (DSE) was not much stable since its formation but was rather volatile. The market grew at a slow but steady rate since 1976 and continued until 1988. However, the market lost about 25% in 1990 but re-gained and moved back to the position in 1991 and again continued with the steady growth rate until 1994. The market also took a short break in 1995 (DSE Daily Price Quotations 1976-95). Therefore, these unstable trends of the market remind again and again that the market is not only dependent on country's economic factors but also largely depend on many other non-economic factors including internal political situations.

The most remarkable years for the Dhaka Stock Exchange are year 1996 and year 1997. In 1996 the DSE gained 196% and on the other hand, losses 68% in 1997. If 1996 was the phenomenal year of gains for Bangladesh equities, 1997 was equally impressive for its sizeable losses. Along with the regional financial crisis and local political turmoil, there was no reason for Bangladesh equities to gain in 1997. The forsaken state of the equities market resulted in a 67.1% loss for the DSE All-Share Price Index in Taka terms while the dollar-based IFCG Bangladesh Index crashed by 67.7% (Emerging Market Factbook 1998, p. 258).

The major objective of this chapter is to describe the major features of the Dhaka Stock Exchange. For this purpose, this chapter will basiclly focuses on the main issues of the DSE and specially the issues related to this thesis and dividend policy. As this chapter is performed to discuss the issues of the DSE in relation to this thesis, so, this chapter incorporates tax clientele of dividend, dividend payment pattern, ownership structure, and all other issues related to this thesis. The rest of the chapter is divided into five sections. The general overview of the DSE including the history and development of the DSE are incorporated in section 3.1. Section 3.2 contains the major characteristics of the market including tax clientele of dividend policy, share and capital, turnover, and market capitalization in the DSE. The performance of the DSE in

the last ten years along with the payment of dividends, IPO, and price index are included in section 3.3. Section 3.4 incorporates the remarkable features of the DSE listed non-financial sector companies. Finally, a summary and concluding remarks are included in section 3.5.

3.1. General Overview of the Dhaka Stock Exchange

3.1.1. History and Development of the Dhaka Stock Exchange:

In the early part of 1952, about five years after the independence of erstwhile Pakistan in 1947, the Calcutta Stock Exchange prohibited transactions of Pakistani stocks and shares. This necessitated formation of a Stock Exchange in the erstwhile East Pakistan and following a series of discussions in a number of forums whether the then East Pakistan should have an independent Stock Exchange or have a branch of a Stock Exchange with the headquarter in the then West Pakistan, the East Pakistan Stock Exchange Association Ltd., an independent Stock Exchange was incorporated on April 28, 1954. It changed name to the East Pakistan Stock Exchange Ltd. on June 23, 1962 and finally to its present name of the Dhaka Stock Exchange Ltd. on May 14, 1964. Although incorporated in 1954, formal trading on the East Pakistan Stock Exchange Association Ltd. was started in 1956 at Narayanganj. In 1958, the Stock Exchange was shifted to Dhaka and started functioning at the then Narayanganj Chamber Building in the Motijheel Commercial Area, now known as the Metropolitan Chamber of Commerce Building. The Dhaka Stock Exchange purchased its own land and moved to its own building at 9F, Motijheel Commercial Area, Dhaka in 1959 (see www.dsebd.org).

It may be worthwhile to mention here that in 1971, prior to the emergence of sovereign Bangladesh, there were 196 securities listed on the Dhaka Stock Exchange with a total paid-up capital of Taka 4 billion. Daily average transaction of shares during that period was about 20,000. After the independence of Bangladesh, the trading activities of the Stock Exchange remained suspended up to 1976 due to the economic policy pursued by the then Government. With change in the Government policy in 1976, the trading activities were resumed with only 9 companies listed on the Stock Exchange and the operational activities since then have considerably expanded, the

momentum being very significant since 1983. The growth pattern of listed securities from the year 1976 is given in Table 3.1.

It is clear from Table 3.1 that during the recent years not only the number of listed companies on the Dhaka Stock Exchange have increased but also the intrinsic strength of the stock market have significantly increased. This healthy trend outlines the role of the Dhaka Stock Exchange in the development of a stable capital market formation in Bangladesh.

Table 3.1: Growth Pattern of Listed Securities:

Year	Listed Companies	Listed Securities (in Million)	Paid-up Capital (in Million Tk.)	Market Capitalisation (in Million Tk.)
1976	9	13.61	137.50	146.00
1977	11	14.65	230.50	248.50
1978	14	18.45	281.30	305.40
1979	17	21.23	365.10	393.70
1980	23	22.23	405.90	436.90
1981	26	26.65	528.10	603.20
1982	29	32.42	725.60	811.60
1983	49	44.37	1001.50	1211.30
1984	58	62.35	1546.60	2256.50
1985	69	86.45	2059.70	3492.64
1986	78	99.59	2653.00	5730.60
1987	85	105.28	3094.70	12635.10
1988	93	123.06	3663.70	13557.00
1989	105	149.68	4539.20	15351.00
1990	116	161.37	5361.10	11486.00
1991	120	167.64	5586.59	10397.00
1992	128	172.34	6020.34	12299.00
1993	132	195.06	8201.74	18098.73
1994	150	241.50	11673.80	41770.70
1995	175	341.78	19438.05	56518.14
1996	191	397.43	23052.40	168106.00
1997	209	510.48	28159.80	71255.54

Source: Dhaka Stock Exchange annual Reports and Monthly Reviews (1976-98).

Besides, the market is growing in all aspects day by day and moving towards the maturity phase. A summary statistics about the overall growth and development of the DSE is presented in Table 3.2.

Table 3.2: Growth and Development of Dhaka Stock Exchange:

Title	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
No. of listed companies	93	105	116	120	128	132	150	175	191	209
Market capitalisation (In million US$)	430	476	321	269	314	453	1049	1255	4110	1668.75
Trading value (In million TAKA)	130	174	195	116	438	579	4284	4660	30137.11	174046.68
Trading value (In million US$)	4.1	5.4	6.0	3.2	11.2	14.6	106.5	116.5	717.55	3829.41
Turnover Ratio	1.0	1.2	1.4	1.1	3.9	3.8	14.3	13.3	29.6	12.8
Local Index: DSE Index[3]	533.6	467.8	350.8	296.3	369.6	391.8	845.6	834.7	2300.1	756.8
% of changes in Index	4.2	-12.3	-25.0	-15.5	24.8	6.0	115.9	-1.3	175.6	-67.1
P/E Ratio	7.8	23.9	13.7	9.5	10.6	n.a.	10.1	15.87	19.11	11.32
P/BV Ratio	1.8	1.1	0.9	1.5	n.a.	1.5	n.a.	n.a.	n.a.	n.a.
Dividend Yield (%)	7.0	4.4	7.7	7.7	6.6	n.a.	5.7	4.85	3.53	5.37
IFC Global Index:[4] Bangladesh Index	-	-	-	-	-	-	-	100	296.0	95.7
Changes (%)	-	-	-	-	-	-	-	-	196.0	-67.7
P/E Ratio	-	-	-	-	-	-	-	-	49.0	13.5
P/BV Ratio	-	-	-	-	-	-	-	-	7.0	2.1
Dividend Yield (%)	-	-	-	-	-	-	-	-	1.1	4.3
Total Return Index	-	-	-	-	-	-	-	100.0	303.5	101.4
Change in Total Return Index	-	-	-	-	-	-	-	-	203.5	-66.6

Source: Dhaka Stock Exchange Annual Reports, Monthly Reviews, Daily Price Quotations (1976-98), and Emerging Stock Market Factbook 1998.

[3] The base date for the DSE All Share Price Index is 1985 = 100.

[4] The base date for the IFCG Bangladesh Index is Dec. 1995 = 100.

3.2. Characteristics of the Dhaka Stock Exchange

3.2.1. Remarkable Features of the DSE:

3.2.1.1. Share and Capital:

There are approximately 510 million securities listed on the DSE. Among them 99.3% are shares, 0.5% are mutual funds, and 0.20% are debentures. These figures indicate that the market is completely covered with shares. The total issued capital of the market is approximately 28160 million in Taka. The average size of the company is 218 million in Taka. However, there are some big companies enlisted in the Dhaka Stock Exchange whose issued capital is over 1000 million Taka including Shine Pukur Holdings Ltd. (2520 million Taka), Rahima Food Corporation (2000.002 million Taka), Rupali Bank (1250 million Taka), and Monno Fabrics (1150 million Taka). Moreover, there are also some very small companies listed in the Dhaka Stock Exchange whose issued capital is less than 5 million Taka including Hill Plantation Ltd. (1.5 million Taka), The Engineers (2 million Taka), and Monno Staflers Ltd. (4.00 million Taka).

3.2.1.2. Market Capitalisation:

Market capitalisation of the Dhaka Stock Exchange was only 146 million Taka in 1976, which increased at a steady rate until 1989 but slowed down a little bit in 1990-1991. However, market capitalisation got back to the position in 1992 and kept continuing until 1995. Moreover, the most remarkable years are 1996 and 1997. In 1996, market capitalisation increased about 235% but declined sharply in 1997 by 58%. The average market capitalisation is roughly 5% of GDP (Table 3.2).

3.2.1.3. Turnover of Shares:

The turnover of shares in the Dhaka Stock Exchange has moved dramatically in the last few years. The trading volume of the DSE shares were not much substantial until 1993 but increased sharply by 640% in 1994 and remained almost the same in 1995. However, the trading volume again increased by 550% in 1996. The trading volume in the DSE stood at 98,292,050 shares in 1997. In addition, during1997-98 volume declined by18%, on the other hand, value declined by 64%.

During 1996-97, the DSE turnover was Tk. 35413 million and the same declined to Tk. 12616.9 million during 1997-98. The average daily turnover declined in terms of value by 61% from Taka 126.0 million in 1996-97 to Taka 49.3 million in 1997-98. However, because of introduction of automated on-line trading the daily turnover showed vital growth and stood at Tk. 550.0 million on 28th September 1998 (Table 3.2).

3.2.1.4. Tax Clientele of Dividend in the Dhaka Stock Exchange:

The tax rate on the dividend income for the institutional shareholders is 15% in Bangladesh. However, the tax rate on the dividend income for the individual shareholders varies depending on the individual shareholder's slab of income, so, the tax rate for the individual shareholders vary one group to the other. But recently the tax rate has flatted to 10%, which is deductible at source irrespective of the slab of income (FY1998-99). This is the lowest tax rate on dividend income ever for individual shareholders in Bangladesh. It is, however, notable that the lowest tax rate on dividend income usually encourages the shareholders to prefer dividends to capital gains. Now let's find out whether the shareholders prefer dividend to capital gain in practice.

However, before flatting the dividend income tax rate to 10% for all classes of individual shareholders in the financial year 1998-99, individual shareholders used to get an exemption of total income for tax purpose up to a certain limit and the rest of the income used to be taxed at the differential rates depending on the slab of income. And the basic rate was in between 10-15% and the highest rate was 25%.

Moreover, in case of capital gains, if the income arises within 5 years from acquisition of capital assets then lower tax payers would be taxed at 15% and higher tax payers would be taxed at 25%; and if the income arises after 5 years of acquisition of capital assets then both the tax payers would be taxed at 15%.

In addition, the tax rate for capital gains have been changed in 1997-98 as: if the income arises within 5 years from acquisition of capital assets then lower tax payers would be taxed at 10% and higher tax payers would be taxed at 25%; and if the income

arises after 5 years of acquisition of capital assets then lower tax payers would be taxed at 10% but higher tax payers would be taxed at 15%.

3.2.1.4.a. Tax Clientele in the Dhaka Stock Exchange in FY 1995-96 and 1996-97:

Tax on Dividend Income:

	Tax status of the shareholders		
	Exempt	Basic or Lower Rate	Higher Rate
Tax Rates on Dividend Income	p = 0	p = .15	p = .25

Capital Gain Tax:

Period	Tax status of the shareholders		
	Exempt	Basic or Lower Rate	Higher Rate
Arises within 5 years of acquisition	z = 0	z = .15	z = .25

Where,

p = tax on dividend

z = tax on capital gain

Therefore, we see that p = z, so, all the tax payers are indifferent for choosing either capital gains or dividends in this case.

Capital Gain Tax:

Period	Tax status of the shareholders		
	Exempt	Basic or Lower Rate	Higher Rate
Arises after 5 years of acquisition	z = 0	z = .15	z = .15

In this case, we see that p>z, so, tax exempt and low tax payers are indifferent for the preference but higher tax payers will prefer capital gains to dividends.

3.2.1.4.b. Tax Clientele in the Dhaka Stock Exchange in FY1997-98:

Tax on Dividend Income:

	Tax status of the shareholders		
	Exempt	Basic or Lower Rate	Higher Rate
Tax Rates on Dividend Income	p = 0	p = .10	p = .25

Capital Gain Tax:

Period	Tax status of the shareholders		
	Exempt	Basic or Lower Rate	Higher Rate
Arises within 5 years of acquisition	z = 0	z = .10	z = .25

Therefore, as p = z, so, all the tax payers are indifferent for choosing either dividends or capital gains.

Capital Gain Tax:

Period	Tax status of the shareholders		
	Exempt	Basic or Lower Rate	Higher Rate
Arises after 5 years of acquisition	z = 0	z = .10	z = .15

Tax exempt and low tax payers are indifferent but higher tax payers will prefer capital gain to dividend in this case because p>z.

3.2.1.4.c. Tax Clientele in the Dhaka Stock Exchange in FY1998-99:

Tax Rates on Dividends:

	Tax Status of the Shareholders	
	Basic or Lower Rate	Higher Rate
Tax rates on Dividend Income	p = .10	p = .10

Capital Gain Tax:

Period	Tax status of the shareholders		
	Exempt	Basic or Lower Rate	Higher Rate
Arises within 5 years of acquisition	z = 0	z = .10	z = .25

Capital Gain Tax:

Period	Tax status of the shareholders		
	Exempt	Basic or Lower Rate	Higher Rate
Arises after 5 years of acquisition	z = 0	z = .10	z = .15

The exempt shareholders will prefer capital gains to dividend because they are not getting tax exemption in dividend income. However, the basic tax payers will be indifferent between capital gain and dividend because both the rates are the same. And the higher tax payers will prefer dividend to capital gain because they are supposed to pay 10% tax on dividend income whereas they are supposed to pay more taxes on capital gains.

3.2.1.5. Ownership Structure:

It is observed the closely held nature of the ownership in the Dhaka Stock Exchange because a large proportion of stocks held by insiders (directors, employees, and group management). However, Bangladesh government also plays a vital role in holding stocks in the DSE. Bangladesh government holds the major shares of some companies and small amount of shares of many of the companies. Moreover, Investment Corporation of Bangladesh (ICB) also plays an important role in holding shares in the DSE. As an underwriter and as well as the operator of the DSE listed nine mutual funds, the ICB holds a large many of shares of different companies. However, among the institutional shareholders, the ICB is the major shareholder in Bangladesh. Moreover, foreign owners are also largely holding the shares of different companies. Even though foreigners do not hold the major proportion of shares but foreign ownership exists more or less in each and every company of the DSE. In addition, on

an average the general shareholders are holding 25% of the shares of the market. Finally, as we see the closely held nature of ownership in the DSE, which indicates clearly that the outsider owners are unprotected, so, it is assumed that the insiders usually maximise their own benefits by profit transfer and asset striping and consequently the firms go for higher amount of external financing. However, it is also clear that the shareholders obviously get a very lower amount of dividends.

3.2.1.6. Group of Companies:

So far, there are eight groups of companies in the DSE and each and every group of company has about 8/10 companies listed in the DSE. Among the group of companies BEXIMCO group is the largest in the DSE and this group is the most influential group in the DSE. BEXIMCO group consists of ten companies, which are listed, in the DSE. Among them three are from pharmaceuticals and chemicals, four are from textiles, and one each from services and real estate, foods and allied, and miscellaneous sectors. Among others, APEX group, ISLAM group, and MONNO group of companies are remarkable. It is worthy to mention that as the group of companies are more powerful owners of the market, so, they have a major influence on their group enlisted companies and as well as on the market as a whole. Therefore, the closely held nature also confirms here by the higher amount of insider control here, which ultimately discourages the dividend payment in the market.

3.3. Performance of DSE

3.3.1. Performance of DSE: At a Glance:

3.3.1.1. All Share Price Index[5]:

The price index, a barometer of price movement of all the listed securities, witnessed a steady movement since 1983 but massive changes in 1996 and 1997. Year 1996 makes an extraordinary bullish movement of the market and bearish spell during 1997-98. The index moves to 2300 points in 1996 and remarkably moves to 3648 points on 14-11-96. However, the index declined to 676.47 points on 30-06-98 as

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[5] $Index = \left\{ \frac{MarketCapitalization}{IssuedCapital} \right\} * 100$

against 1111.55 points on 30-6-97. The price index in June 1998 was the lowest ever since 1994.

Due to regional economic depression and the re-allocation of international portfolio investment, the price index of almost all the emerging economics in East Asia declined during 97-98 which may be seen from the data given in Table 3.3.

Table 3.3: Regional Markets:

Country	Price Index (24.6.97)	Price Index (24.6.98)	% Decrease
Thailand	496	264	47%
Hong Kong	15065	8665	43%
Indonesia	713	431	46%
Pakistan	1566	867	45%
DSE	1097	678.23	38%

Source: Dhaka Stock Exchange Annual Report 1997-98.

In comparison with the industrially developed countries in Asia, the position of the DSE is rather better than other markets.

3.3.1. 2. Initial Public offering (IPO):

Since 1993-94 a significant number of companies are using the market to raise capital. The market is now capable of handling big flotation. As the market is successful to attract the investors, new companies are relying more on the market rather than on banks to raise capital. In 1997-98 public offerings of shares and debentures valued at Taka 438.5 million were made and against that there was a public response for Taka 1149.4 million. Even in the depressed market (FY1997-98), most of the issues were over subscribed except one or two specialised issues (see Table 3.4).

3.3.1.3. Responsibilities of Listed Companies:

The DSE considers that the listed companies have a great responsibility to sustain investors' confidence and protect their interests. Disclosures of their accounts, transparency in their statements as well as availability of broader financial products will go a long way towards further strengthening the activities of the securities market. Bringing accounting standards to international norms has also become a priority whose implementation will help to improve investor confidence both local and international arena. It is worthy to note that the financial operations of the listed companies are

gradually improving. During the fiscal year 1997-98, 124 listed companies out of 213 declared dividends ranging from 5% to 150% and showed better performance in their operations (Table 3.5).

3.3.1.4. Payments of Dividends:

The figures show that even though as a member of the emerging markets the payment pattern of the DSE listed companies is appreciating. Approximately 70% of the companies held AGM and 50% of the companies declare dividends in each year. However, pay-out rate is not too bad in comparison to other emerging markets. The average divided rate is approximately 20%, which is better in comparison to the time deposit interest of Bangladesh.

3.4. Characteristics of the DSE Listed Non-financial Sector Companies

3.4.1. Remarkable Features of the Non-financial Sector Companies of the DSE:

3.4.1.1. Market Capitalisation:

Different sizes of non-financial sector companies are listed on the Dhaka Stock Exchange. There are some very small companies whose market capitalisation are even less than 5 million in Taka. However, there are also some very big companies whose capitalisation are over 1000 million in Taka. The average market capitalisation of the DSE listed non-financial sector companies is approximately 218 million in Taka. The market capitalisation of the non-financial sector companies is almost 70% of the total market capitalisation of the DSE.

3.4.1.2. Payment Pattern:

Approximately 93% of the non-financial sector companies hold Annual General Meeting (AGM) in every year and almost 55% of the companies pay dividends. However, 3-4% of the companies pays stock dividends and 3-4% of the companies also declares right shares as well. The average dividend payment is approximately 20%. Moreover, some of the companies pay very lower amount of dividends, e.g., less than 5% and on the other hand, some companies also pay very higher amount of dividends, e.g., 200-300%. But majority of the companies pay moderate dividend, e.g., approximately 15%-25% (Table 3.6, and Table 3.7).

Table 3.4: IPO and Flotation over the Period for DSE:

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
No. of Issues	21	12	11	9	11	4	26	24	24	12
Size of Public Offer (in Million Taka)	302.96	258.61	158.39	167.27	115.00	142.50	2558.08	1319.40	2307.34	570.24
Size of Public Offer (in Million US$)	9.61	8.01	4.81	4.71	3.01	3.56	63.95	32.99	54.94	12.55
Public Subscription (in Million Taka)	721.543	466.31	194.73	145.71	132.16	152.16	5563.56	5833.45	16909.59	2678.18
Public Subscription (in Million US$)	22.90	14.45	5.92	4.08	3.46	3.80	139.09	145.84	402.61	58.93
Over Subscription Times	2.38	1.80	1.23	0.87	1.15	1.07	2.17	4.42	7.33	4.70

Source: Dhaka Stock Exchange Annual Report 1997-98.

Table 3.5: A Table is Given below Showing Ten Years Performance:

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1. No. of companies held AGM	66	77	96	98	98	98	114	137	153	154
2. No. of companies declared dividend	42	53	57	59	57	63	62	87	93	91
3.No. of companies declared bonus shares	8	2	1	3	2	2	9	14	17	27
4. No. of companies declared right shares	0	0	2	3	2	2	9	10	08	20

Source: Dhaka Stock Exchange annual Reports (1988-98).

Table 3.6: Payment Pattern of Non-financial Sector of DSE:

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
No. of Companies Declared Dividend	36	51	52	46	44	49	59	75	69	74
No. of Companies Declared Stock Dividend	7	3	2	1	2	5	10	14	24	8
No. of Companies Declared Right	3	3	0	3	4	2	9	6	21	7
Dividend Yield	4.0E-02	5.9E-02	6.9E-02	5.2E-02	9.5E-02	.1110	5.6E-02	4.8E-02	2.8E-02	2.3E-02
Dividend Pay-out Ratio	.2112	.2688	.2153	.2565	3.2454	.1365	3.6922	.2476	.2305	.2472

Source: Working Datasheets.

Table 3.7: Distribution of Dividend Pay-out Ratio of Non-financial Sector of the DSE:

Dividend Pay-out	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
<10%	2	3	4	3	7	9	7	5	7	12
10-20%	14	23	23	21	14	16	24	33	30	32
20-30%	13	16	20	13	15	13	16	19	18	16
30-40%	4	9	5	8	5	7	4	11	6	9
40-50%	1	-	-	-	2	-	4	3	2	1
>50%	2	-	-	1	1	4	4	4	6	4

Source: Working Datasheets.

3.4.1.3. Risk and Return:

The average Dimson's[6] (1979) beta for the non-financial sector companies is approximately 15-20% except 2/3 years, which is quite good for a market like the DSE. However, the security return is very low in comparison with other emerging markets, which is approximately 2-3% only (Table 3.8).

3.4.1.4. Ownership Structure:

Insiders (directors and sponsors, employees, and group management) hold the major shares of the DSE listed non-financial sectors companies. The insiders hold approximately 30% of the shares. However, general shareholders hold approximately 27% of the shares. Moreover, the institutional shareholders hold only 15% of the shares. Among others, foreigners hold approximately 11% and Bangladesh Government holds approximately 6-7% of the shares. Therefore, these figures also indicate the closely held nature of the non-financial sector companies in the DSE (Table 3.9).

3.5. Conclusion

The stock market in the independent Bangladesh began its journey in 1976 by starting the activities of the DSE with only 9 companies. The growth of the market was relatively slow until 1982 but started to move up since 1983. The year 1996 was the year of the boom for the DSE but suddenly the market crashed in 1997. The main reason for that crash was the bad economic condition in the region. Apart from that, the market is growing in size and moving up on a steady rate. However, the pay-out patterns of the market especially cash dividend is about 20%, which is not too bad as an emerging market and in comparison with the bank interest in Bangladesh as well. Moreover, it is observed a closely held nature of ownership in the DSE listed companies, which is really a bad news for market as a whole. Although DSE is a baby in the list of capital markets but it is walking through step by step.

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[6] $R_{it} = \alpha_0 + \beta_1 R_{mt} + \beta_{-1} R_{mt-1} + \beta_{+1} R_{mt+1}$

Table 3.8: Risk and Return:

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Beta[7]	.1415	.2396	.1587	.1880	.8732	.1117	.5443	.9867	.5236	.7564
Return[8]	-1.E-04	6.3E-03	-4.0E-04	2.5E-04	7.4E-04	4.3E-04	2.9E-03	2.5E-03	8.1E-03	-5.E-04

Source: Working Datasheets.

Table 3.9: Year-wise Distribution of the Shareholdings of the Non-financial Sector Companies:

Category of Ownership	1988 (%)	1989 (%)	1990 (%)	1991 (%)	1992 (%)	1993 (%)	1994 (%)	1995 (%)	1996 (%)	1997 (%)
Institutional Shareholder	13.0291	15.57	7.2521	8.0142	11.5655	13.2961	13.5234	12.7627	21.683	22.0838
Insiders	19.4444	16.4545	24.4544	26.0105	31.8545	32.2050	36.0405	37.8266	39.5115	39.3632
Foreigners	11.8896	11.0089	7.4455	5.9956	10.4327	9.5195	10.7483	11.7097	8.6170	7.3118
Government	3.5482	5.1624	8.2013	8.1873	6.7628	6.3630	5.2687	3.4447	3.0709	3.0285
General Shareholder	24.6575	24.5774	31.2967	30.3190	23.5367	23.8347	25.0630	22.9293	27.1176	28.2127

Source: Working Datasheets.

[7] Dimson's beta.

However, as we have already been mentioned earlier that fully computerised automated trading system established in the Dhaka Stock Exchange in 1998, to reap the full benefits of automation it is an emerging need to establish a central depository System (CDS). Since automation, the DSE daily turnover has increased to as high as Taka 550.0 million and it is anticipated further growth in the future. The introduction of a CDS will eliminate the labour intensive nature of the DSE's present settlements by ending the physical delivery and execution of transfer deeds. Under this system, all the securities will be kept deposited at the CDS bank, which will record and transfer the securities from one account to the another and accordingly the risks of losses; forgeries and duplication will also be reduced.

Furthermore, the government of Bangladesh has recently reasserted their determination to plough ahead with the privatisation of a number of SOE's (State Owned Enterprises) as well as allowing pension and trust funds to participate in the market. For investors with an appetite for risk the rewards are tangible; as one venture capitalist recently pointed out, "Bangladesh is a venture capitalist dream compared to other economies in the region".

Chapter Four: Research Methodology

4.0. Introduction:

Research is defined as any organised inquiry carried out to provide information for the solution of problem (Emory, 1980). However, research methodology is the process where there is a clear purpose and objective, define the research problem, and develop strategies for the solution of problems that have been identified. In general, the research methodology consists of four major stages: exploration of the situation, development of the research design, data collection, and analysis and interpretation of the results (Emory, 1980).

Moreover, research methodology is the way to handle research problems. There are two methods of research: one, nomothetic, and two, ideographic. These two research methods are also known as quantitative or deductive method and qualitative or inductive method (Bryman, 1988). Typically, quantitative technique deals with either primary or secondary data and solves the research problem through parametric or non-parametric statistical tests. On the other hand, qualitative technique deals with the theoretical issues and concerns about different other dimensions of the research, e.g., behavioural or theoretical research. This chapter primarily discusses general characteristics of the research methodologies and explains the justification of choosing quantitative research method for this study. This chapter also explains secondary data collection procedure, secondary data analysis techniques, and justifies the choice of secondary data analysis techniques for this empirical study.

The rest of this chapter is divided into three sections. An overview of the alternative research methodologies including the explanation of choosing quantitative research method for this study is incorporated in section 4.1. Section 4.2 provides a general discussion on the data and sample of the study along with the discussion of sample selection criteria, sample size and period, and secondary data collection for the empirical phases. The suitability of secondary data analysis and the justification of choosing secondary data analysis techniques for this study are discussed in section 4.3.

The secondary data analysis techniques for each of the three areas of empirical work including the explanation of the alternative techniques and the justification for choosing the data analysis techniques is incorporated in section 4.4. Finally, section 4.5 contains the general summary and concluding remarks of this chapter.

4.1. Choice of Research Methodology:

There are two types of research methods: one, nomothetic and two, ideographic. Nomothetic methodologies have an emphasis on the importance of basing research upon systematic protocol and technique (Burrell and Morgan, 1979). This is epitomised in the approach and methods employed in the natural science, which focus upon the process of testing hypotheses in accordance with the standards of scientific rigour. Standardised research instruments of all kinds are prominent among these methodologies. Emphasis is therefore placed upon covering-law explanations and deduction, using quantified operationalisations of concepts in which the element of motive/purpose/meaning is lost, because of the need for precise models and hypotheses for testing (Gill and Johnson, 1997). This research is also called deductive method of research. A deductive research method entails the development of a conceptual and theoretical structure prior to its testing through empirical observation (Gill and Johnson, 1997). Ideographic methodologies (Burrell and Morgan, 1979), on the other hand, emphasise the analysis of subjective accounts that one generates by *'getting inside'* situations and involving oneself in the everyday flow of life. There is an emphasis upon theory grounded in such empirical observations, which takes account of subjects meaning and interpretational systems in order to gain explanation by understanding (Gill and Johnson, 1997). However, this method is also called induction method of research. The logical ordering of induction is the reverse of deduction as it involves moving from the *'plane'* of observation of the empirical world to the construction of explanations and theories about what has been observed (Gill and Johnson, 1997). In addition, Easterby-Smith *et al.* (1991) named these two methods as positivism and phenomenology. Positivism views reality as external and objective, with the role of research cast as making reliable and valid observations of this reality in order to test fundamental laws hypothesised from existing theory. In contrast, phenomenological approach is inductive in that

researchers build theories and propositions only following a detailed understanding of experience (Creswell, 1994).

These two research methods are also known as: quantitative method and qualitative method. Bryman (1988) defines quantitative research as,

> *'Quantitative research is, then, a genre which uses a special language which appears to exhibit some similarity to the ways in which scientists talks about how they investigate the natural order – variables, control, measurement, experiment' (p. 12).*

Bryman (1988), however, defines qualitative research as,

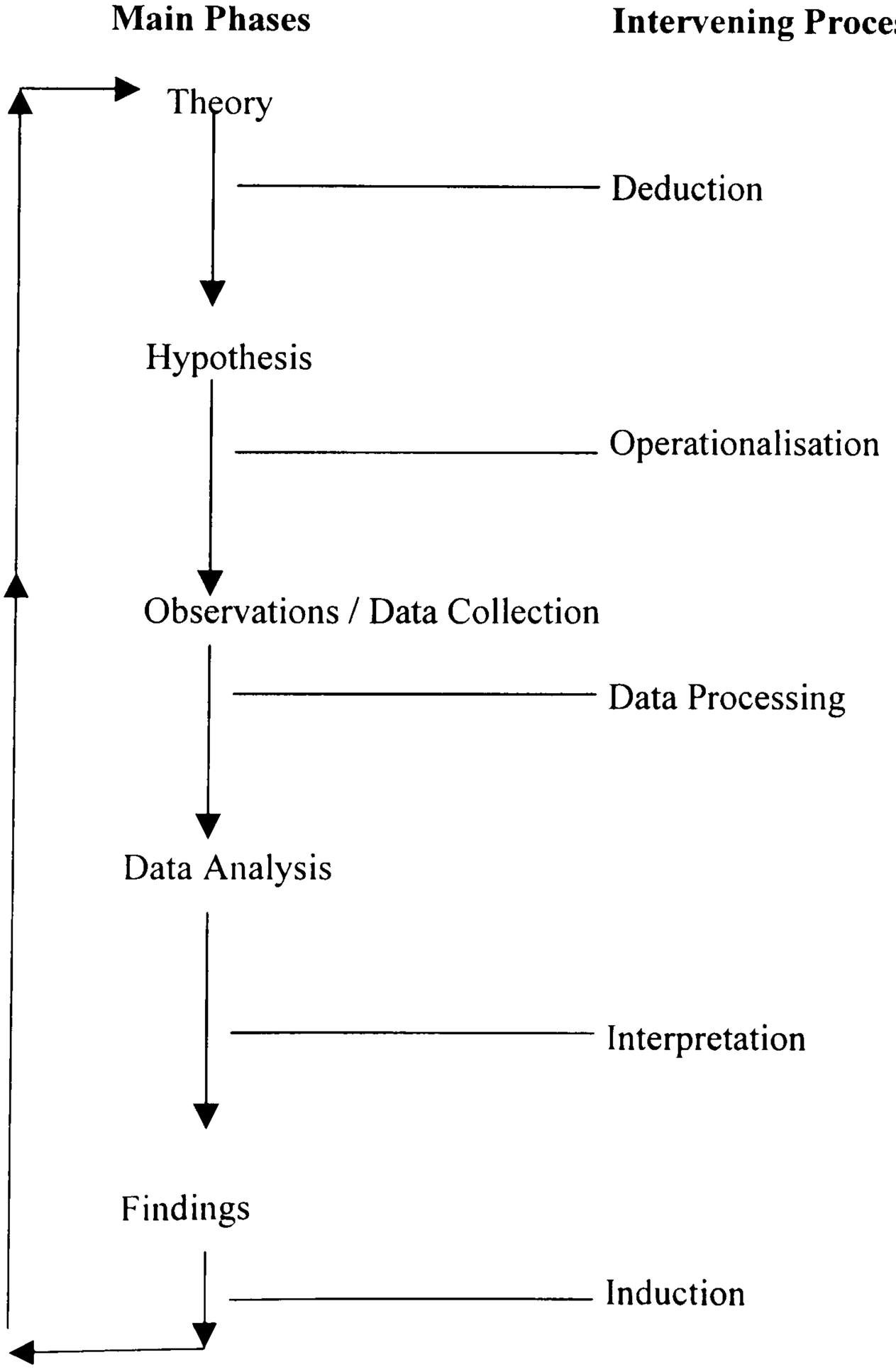
> *'The best known of these methods is participant observation, which entails the sustained immersion of the researcher among those whom he or she seeks to study with a view to generating a rounded, in-depth account of the group, organization, or whatever' (p. 45).*

Quantitative research is often conceptualised by its practitioners as having a logical structure in which theories determine the problems to which researchers address themselves in the form of hypotheses derived from general theories (Bryman, 1988). However, Creswell (1994) indicates that quantitative studies are characterised by the use of deductive form of logic wherein theories and hypotheses are tested in a cause-and-effect order. Concepts, variables, and hypotheses are chosen before the study begins and remain fixed throughout the study (see Figure 4.1).

However, Bryman (1988) mentioned that, quantitative research, then, could be seen as linked partly to positivism and partly to diffuse and general commitment to the

practices of the natural scientist. While all of the characteristics of what is conventionally taken to be positivism can be divined in quantitative research, not all of its preoccupations can be directly attributed to positivism. Rather, it seems more sensible to see more of them as a manifestation of a vague commitment to the ways of the natural sciences. It is also seems that there may be aspects of the general approach of quantitative researchers which are not directly attributable to either positivism or to the practices of the natural sciences. Moreover, qualitative research is interactive research. As such, the biases, values, and judgement of the researcher become stated explicitly in the research report (Creswell, 1994).

Figure 4.1: The Logical Structure of the Quantitative Research Process:



Source: Creswell (1994).

However, Ghauri *et al.* (1995) noted that the main difference between qualitative and quantitative research is not quality but procedure. In qualitative research, statistical methods or other procedures of quantification do not arrive at findings. The difference between quantitative and qualitative methods is not just a question of quantification, but also a reflection of different perspectives on knowledge and research objectives.

Table 4.1: The Major Differences between Quantitative and Qualitative Research are:

Aspects of Difference	Quantitative	Qualitative
1. Role of research	Preparatory	Means to exploration of actor's interpretation
2. Relation between researcher and subject	Distant	Close
3. Researcher's stance in relation to subject	Outsider	Insider
4. Relationship between theory / concepts and research	Confirmation	Emergent
5. Research strategy	Structured	Unstructured
6. Scope of findings	Nomothetic	Ideographic
7. Image of social reality	Static and external to actor	Processual and socially constructed by actor
8. Nature of data	Hard, reliable	Rich, deep

Source: Ghauri *et al.* (1995).

Moreover, quantitative research is typically taken to be exemplified by the social survey and by experimental investigation. In contrast, qualitative research tends to be associated with particular observation and unstructured, in-depth interviewing (Bryman, 1988).

Closely allied to the two philosophical paradigms is the choice between qualitative and quantitative research methodologies (Creswell, 1994). Maanen (1983) defines qualitative methods as an array of interpretative techniques which seek to describe, decode, translate and otherwise come to terms with the meaning, not the frequency, of certain more or naturally occurring phenomena in the social world. The primary techniques associated with qualitative methods are interviews, observation and dairy methods. However, qualitative methodology provides the researcher with an opportunity to probe a small number of samples in depth to uncover new clues, open up new dimension of a problem and secure vivid, accurate and inclusive accounts that are

based on personal experience. Moreover, qualitative design is inherently complex and time consuming as design rules and procedures are not fixed (Creswell, 1994).

It is well known that quantitative method is more suitable for testing the consequence of theory. Researchers agreed that quantitative research method is suitable and easier in case of longitudinal studies, i.e., working with larger sample and longer period. Besides these, the basic problems of qualitative research are: *one*, the ability of the investigator to see through other peoples eye and to interpret events from their point of view; *two*, the relationship between theory and research in the qualitative tradition; and *three*, the extent to which qualitative research deriving from case studies can be generalised (Bryman, 1988, p. 72). In contrast, the major strength of quantitative research are: *one*, reliable data source, *two*, logical structure, *three*, theories determine the research problems, and *four*, hypotheses derived from general theories.

This study conducts quantitative research method for many reasons: *one*, nature of research problem of this study, which is measurable and objective rather than subjective; *two*, this study tests the consequence of theories in practical world; *three*, quantitative method possesses high internal validity and generalised; *four*, quantitative method is easily applicable for longitudinal study; and *five*, quantitative method stimulates further studies and it is easily reliable, which eventually helps to verify the findings as well as provides direction for the acceptance, modification, or necessary to formulate new theory. Therefore, the logical structure of the quantitative method and the nature of research problem of this study directs to prefer quantitative research method for the proposed research.

There are two ways of collecting data for quantitative research: *one*, primary data collection; and *two*, secondary data collection. It is worth mentioning that primary data is quite unable to deal with the nature of the research problems and research questions of this thesis. However, while primary data collection procedure considers different dimension and aspects into the research (e.g., opinion survey), this process is problematic for many reasons: *one*, lack of response; *two*, unreliable data; *three*,

different opinion from open end questionnaire; *four*, less consideration of opinion in case of close end questionnaire; *five*, difficult to conduct panel study; *six*, costly; and *seven*, time consuming. On the other hand, secondary data collection is easier and less time consuming. It is also possible to explore the data for patterns of change and continuity (longitudinal analysis of data) as opposed to a static cross-sectional analysis. However, secondary data is free from subjectivity. Secondary data can also provide a means of triangulating data (Blumer, 1984). In addition, as this research employs panel study, it needs to collect data for the same companies for several years (10 years), which is virtually complicated in case of primary data collection. Therefore, these are the reasons to collect data from secondary sources for the proposed study.

Finally, in order to solve the proposed research problems in the emerging markets, this study employs quantitative research methodology and conducts secondary data collection procedure to collect data from the Dhaka Stock Exchange listed companies.

4.2. Data and Sample:

4.2.1. Sample Selection Criteria:

(i) Primarily, the Dhaka Stock Exchange listed all companies (209) took into account.

(ii) Investment companies (10 mutual funds) are then excluded because these are the portfolios of the Dhaka Stock Exchange listed securities.

(iii) Banking and Insurance companies (32) are then excluded from the sample because of their differential accounting system.

(iv) The companies are then excluded from the sample which have all company data missing.

(v) The companies are then excluded from the sample which have all market data missing.

(vi) The companies or particular years for certain companies are excluded from the sample where outliers massively pushing up or pulling down the average tendency of any particular variable.

4.2.2. Sample Size and Period:

(a) Sample Size: The final sample consists of 153 Dhaka Stock Exchange listed companies.

(b) Sample Period: Ten years period (1988-1997) is considered for this study.

Table 4.2: Year-wise Listing, De-listing, and Sample Included Non-financial Sector Companies of the Dhaka Stock Exchange:

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Listed Companies	93	105	116	120	128	132	150	175	191	209
De-listed Companies	-	-	-	-	-	-	2	6	7	-
Financial Sector Companies	16	18	21	21	21	23	28	37	40	42
Non-Financial Sector Companies	77	87	95	99	107	109	122	139	152	167
Sample Included Companies	73	83	88	91	99	101	113	130	143	153

The final sample includes 153 Dhaka Stock Exchange listed non-financial companies classified as nine sectors (engineering, food and allied products, fuel and power, jute, textile, pharmaceuticals and chemicals, paper and printing, services and real estate, and miscellaneous sector). However, it is classified all these 153 non-financial sector companies as engineering, food and allied products, jute and textile, pharmaceuticals and chemicals, and miscellaneous sector for this study.

Table 4.3: Sector-wise Sample Distribution is as Follows:

Name of Sector	Number of Companies
Engineering	21
Food and Allied Products	28
Jute and Textile	43
Pharmaceuticals and Chemicals	24
Miscellaneous	37
Total	153

There were 93 companies listed in the DSE in 1988 but that increased to 105 in 1989, to 116 in 1990, and to 209 in 1997. So, it is observable that the listed companies of the DSE are increasing every year because of new listed companies. This study considered all the DSE listed non-financial companies for the ten years period (1988-97) as the sample, i.e., it conducts panel study. However, as the sample size is not same for every year but rather the sample size increases every. This type of panel is called unbalanced panel (Classens *el al.* 1996). This study conducts ten yearly average cross-section models and pooled models (time-series and cross-section together). As Classens *et al.* (1996) mentioned that average cross-section models and pooled models work very fine with unbalanced panel data, so, there is no problem to conduct the secondary analysis of this study with unbalanced panel data. However, the number of observations in pooled regression analysis would be ((SAMPLE SIZE * NUMBER OF YEARS) – MISSING CASES) because of the unbalanced panel data. For example, in case of this study, the number of observations in the pooled model would be ((153*10)-missing cases).

4.2.3. Secondary Data Collection:

4.2.3.1. Empirical Part One: Determinants of Dividend Policy

The Dhaka Stock Exchange listed all non-financial sector companies over the period of 1988-1997 is primarily considered as the sample of this empirical phase. However, as we have already been mentioned earlier, a few number of companies are excluded from the sample because either all of the company or market data of those companies are unavailable. So, the sample size became smaller than the actual companies listed in the Dhaka Stock Exchange. Therefore, the final sample consists of 153 Dhaka Stock Exchange listed non-financial sector companies for this empirical part. All the company data are collected from the annual reports of the listed non-financial sector companies of the Dhaka Stock Exchange for the period of 1988-1997. A part of the market data (1988-1991) are collected from the Dhaka Stock Exchange price quotations, published records of the Dhaka Stock Exchange, and the Dhaka Stock Exchange computer database. The rest of the market data (1992-1997) are

collected from the data channel (Datastream). However, the macro-economic data are collected from the published reports of National Board of Revenue of Bangladesh.

4.2.3.2. Empirical Part Two: Testing Partial Adjustment Dividend Behaviour Models

As previous studies suggest that researchers always consider different company and market characteristics in selecting sample for testing behavioural models, this motivates us to consider a wide-variety of company and market characteristics in selecting the sample for this study. The Dhaka Stock Exchange listed all non-financial sector companies are primarily considered as the sample of this study. Companies are then selected for this study by considering the regularity of paying dividends and non-negative profits (net profit after tax). The Dhaka Stock Exchange listed 83 non-financial sector companies are then taken into account after screened out for this study. Companies are then filtered by considering the dividend payment records, e.g., at least five years among the sample period (1988-97) and also considering different other dimensions, e.g., selected sample should represent all the sectors (incorporation of companies from all sectors of the market), different sizes (large, medium, and small), product diversity (single product and multiple products), activity (active and inactive), frequency of dividend payments (companies always pay dividends and companies sometimes pay dividends), and the range of dividend payments (high, medium and low pay-out) for selecting the final sample. However, the final sample then reduced to 51 Dhaka Stock Exchange listed non-financial sector companies. All the required data for empirical investigation on the partial adjustment dividend behaviour models are collected from the published annual reports of the selected companies.

4.2.3.3. Empirical Phase Three: Security Price Reaction to the Announcement of Dividends

This part of the thesis employs event study methodology to examine the security price reaction to the announcement of dividends. It is defined the announcement day as the event day (Day = 0), which is the day before the day on which dividend announcement news are published in the daily news papers or daily stock price

quotation. It is considered -60 days, -30 days, -20 days, and -10 days of the event day as the observation period and +60 days, +30 days, +20 days, and +10 days of the event day as the comparison period for this study.

Measurement of Abnormal Performance technique is used to compare the abnormal returns between observation period and comparison period of this study. All the cash dividend announcements of the Dhaka Stock Exchange listed 153 non-financial companies over the period of 01-01-1988 to 31-12-1997 are considered as the sample of this study. A part of the market data (1988-1991) are collected from the Dhaka Stock Exchange price quotations, published records of the Dhaka Stock Exchange, and the Dhaka Stock Exchange computer database. The rest of the market data (1992-1997) are collected from the data channel (Datastream). The announcement dates are obtained from the Dhaka Stock Exchange daily price quotations for this study.

4.2.4. Problems for Collection of Secondary Data:

As the proposed study is conducted on an emerging market, this study collects data from the listed companies of the Dhaka Stock Exchange only. While fully computerised automated trading system established in the Dhaka Stock Exchange since 1998, the current study is conducting on the Dhaka Stock Exchange for the period of 1988-97 this is why in the data collection stage we faced a great many problems. *Firstly*, most of the data are manually collected because we got little help from the Dhaka Stock Exchange computerised database. *Secondly*, because of very poor filing system and the carelessness of the responsible officers of the Dhaka Stock Exchange in keeping company records, we got a very small support from the Dhaka Stock Exchange to collect company data. Therefore, we collected the company data by collecting published reports of each and individual company. *Finally*, the reasons mentioned earlier and for many other reasons (e.g., weak data management) the process of secondary data collection from emerging market is very much time consuming, costly and complicated.

4.3. Choice of Secondary Data Analysis:

Secondary data analysis has long formed a central component of social science research, being present in the work of Karl Marx, Sidney and Beatrice Webb, Emile Durkheim (e.g., Suicide) and so on. A number of existing data sets also cover considerable periods of time (e.g., population census data).

Hakim (1982) defines secondary data analysis as,

> *"any further analysis of an existing data set which presents interpretations, conclusions, or knowledge additional to, or different form, those presented in the first report on the inquiry as a whole and its main results" (p. 1).*

Some researchers see secondary analysis as being in some way 'inferior' to the collection of primary data. This may reflect a brief that primary data collection and analysis represent the principal means of adding to the stock of knowledge. Yet often there is considerable scope to generate new findings on the basis of 'old' data. Therefore, secondary data analysis can also form a complement to new research.

Secondary data can be used in both descriptive and explanatory research. The data used may be of both quantitative and qualitative kind. However, Dale *et al.* (1988) note that ethnographic data and data generated through unstructured interviews are hard to subject to secondary analysis. It is commonly argued, therefore, that statistical data generated through surveys, or data derived from official records, documentation etc. are far more amenable to secondary analysis. While some problems could be associated with the secondary analysis, i.e., the question asked in the survey may have been only partially relevant to the current research, definitions of variables may have changed over time, the theoretical and analytical objectives of the original researchers may diverge significantly from the current research, secondary analysis is cost worthy, time saver,

and provide better quality of research. Therefore, all of these considerations lead the current research to choose secondary data analysis.

4.4. Secondary Data Analysis Techniques:

4.4.1. Alternative Data Analysis Techniques in Empirical Part One: Determinants of Dividend Policy

4.4.1.1. Regression Analysis:

(i) **Multiple Regression Equation**:

Typically, the researchers identify the dependent and independent variables and choose the proxies for the variables depending on the previous empirical evidences in this case. Researchers are then run the multiple regression equation based on the selected proxies. In this approach, more emphasis is given to the previous studies for identifying variables. Michaelsen (1961), Gerber (1988), Holder *et al.* (1998), and Saxena (1999) adapted this approach in their empirical studies.

(ii) **System Equation**:

In this approach different stages of least square regression equations run at the same time for the interrelated factors. The researchers run separate regression equations with specific variables for each and every individual factor. This approach is usually used in case of the empirical study for two or more interdependent factors. Jensen *et al.* (1992) considered this approach in their empirical study.

(iii) **Optimum / Equilibrium Equation**:

In this approach the determinants are used to identify an equilibrium point for an optimum dividend policy. It is considered the dividend policy as an optimum policy and the determinants are identified only at an equilibrium point. Rozeff (1982) adapted this approach in his empirical study.

4.4.1.2. Factor Analysis:

This method chooses a set of factors that represents the combinations of several variables and a set of latent dimensions. Primarily some factors identify by considering different aspects and then each and every factor considers a few variables. However, this approach considers a set of different dimensions at the same time. Alli *et al.* (1993) considered this approach in their empirical study.

4.4.1.3. Discriminant Analysis:

This method considers that a change in dividend is a discontinuous function of a set of independent variables. In other word, it assumes that a change in the dividend payment is a clearly defined action by management and that there is a clear distinction between a change and no change in the dividend payment.

The statistical methodology employed to test multivariate statistical method is known as multiple discriminant analysis (MDA). The objective of MDA is to classify objects, by a set of independent variables, into one of two or more mutually exclusive and exhaustive categories. The classification is made by comparing the object's discriminant score (z_j), which is a linear function of the individual variables, with the 'z' score derived for the entire sample. Given this statistical methodology, the intent of the study is to determine that linear combination of financial characteristics which best discriminates firms which increase their dividend from those which maintain the level of payments. Gillespie (1971) adapted this approach in his empirical study.

4.4.1.4. Rank Correlation:

The rank correlation coefficient is the Pearson's correlation coefficient based on the ranks of the data. If the original data for each variable have no ties, the data for each variable are first ranked, and then the Pearson's correlation coefficient between the ranks for the two variables is computed. Like the Pearson's correlation coefficient, the rank correlation range between –1 and +1, where –1 and +1 indicate a perfect linear relationship between the ranks of the two variables. The interpretation is therefore is the

same except that the relationship between ranks, and not values, is examined. Michaelsen (1961) considered rank correlation in his empirical study.

4.4.1.5. Justification of Choosing the Analysis Technique in Empirical Phase One

This phase considered multiple regression analysis approach to identify the determinants of dividend policy in an emerging market. This method best suits this study because we took the dividend theories into account and then selected the variables for each and every theory.

As this study considers the dividend theories to identify the determinants of dividend policy, this is completely new in this area, which adds new value to the research and also attempts to minimise the gap between theoretical studies and empirical studies. However, this study brings the dividend theories into the empirical investigation, which will obviously help to minimise the gap between theoretical and empirical study.

As previous researches suggest that averaging works very well with the unbalanced panel data, which motivates to conduct ten yearly average cross-section and pooled multiple regression analysis for this study. However, multiple regression analysis is more suitable to deal with the research problem and data set for the current research.

4.4.2. Alternative Analysis Techniques in Empirical Phase Two: Testing Partial Adjustment Models

4.4.2.1. Direct Approach:

Typically, the researchers test the partial adjustment models straight way without any change for the empirical investigations. Some researcher test the renowned behavioural models and some researchers test some specific models depending on the data, market, and the objective of the study. This approach helps the researchers to test the specific model to different markets in keeping the individualism of the models. Fama and Babiak (1968) considered this approach in their empirical study on dividend

behaviour and found that dividend policy is primarily governed by the current profitability and lagged dividends.

4.4.2.2. Extended Approach:

Usually, in this approach the researchers primarily consider the partial adjustment dividend behaviour models and then modify either by expanding or by reducing the models to some extent. The researchers usually add, deduct, or modify the model to some extent by taking different variables into account. This approach does neither solely depend on the dividend behavioural models nor consider only different other variables but rather a combination of both. Garg *et al.* (1996) and Mishra and Narendar (1996) adapted this approach in their empirical studies on dividend behaviour.

4.4.2.3. Justification of Choosing Analysis Technique in Empirical Phase Two

The empirical phase two of this thesis adapts the direct approach by testing the partial adjustment dividend behavioural models straight way rather than any modification. There are two reasons, which make this method as more suitable approach for this study:

(a) This method helps the empirical study to keep the individualism of behavioural models intact, and

(b) This method also helps to identify the effect of the specific behavioural models.

4.4.3. Alternative Data Analysis Techniques in Empirical Part Three: Security Price Reaction to the Announcement of Dividends

4.4.3.1. Measurement of Abnormal Performance:

(a) **T-Test Approach**:

In this method, abnormal returns are calculated for the event period and then it is tested whether t-statistics of the abnormal returns between the observation period and comparison period are significantly different from zero or not.

Abnormal returns are calculated according to the following equation:

$$AR_{it} = R_{it} - E(R_{it}) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where,

AR_{it} = Abnormal Return on day 't',

R_{it} = Daily Stock Price Returns on day 't', and

$E(R_{it})$ = Expected Returns on day 't'.

The daily stock price returns are estimated according to the equation below:

$$R_{it} = (P_{it} - P_{it-1}) / P_{it-1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where,

R_{it} = Share Price Return on day 't',

P_{it} = Share Price on day 't', and

P_{it-1} = Share Price on day 't-1'.

The expected return is derived using the well-known market model (Sharp, 1963). Brown and Warner (1985) find this model to be well specified for event studies using daily stock return data.

The expected return is:

$$E(Rit) = \hat{\alpha} + \hat{\beta}Rmt \ldots\ldots\ldots (3)$$

Where,

The *alpha* and *beta hats* are the predicted value of constant and predicted value of beta coefficient respectively. The predicted value of constant (α) and the predicted value of beta coefficient (β) are estimated through Ordinary Least Square (OLS) regression between individual security return and market return.

(b) **Cumulative Effects of Abnormal Returns (CAR) Approach**:

It is calculated the cumulative abnormal returns the days surrounding the announcement dates by summarising the abnormal returns over the event time: K = observation days, 0 (event time), and comparison days.

$$CAR_k = \sum_{i=-10}^{k} AR$$

Where,

AR = Abnormal Returns.

Aharony and Swary (1980) and Fehrs *et al.* (1988) used both of these approaches. However, Abeyratna *et al.*(1997) used only t-test approach.

4.4.3.2. Buy-and-hold Strategy:

This method is useful to evaluate the performance of firms of dividend initiation and omission before, during, and after the event.

The procedures of this approach are:

(a) Calculate the return from a buy and hold strategy:

For each stock, the excess return is defined as the geometrically compounded (buy and hold) return on the stock minus the geometrically compounded return on either (i) the equally weighted index including dividends, (ii) the appropriate market-capitalisation decline, (iii) the equally weighted market index adjusted for the beta of each stock, or (iv) a matching firm in the same industry (two digit SIC code) that is closest in market capitalisation:

$$ER_{j(a\ to\ b)} = \prod_{t=a}^{b}(1 + R_{jt}) - \prod_{t=a}^{b}(1 + MR_t)$$

Where $ER_{j(a, \text{ to } b)}$= excess returns for firm 'j' from time period 'a' to 'b'. For the three day event period, the time period (a to b) is trading days t = -1, 0, +1. For the monthly periods before or after the event, the returns are calculated assuming 21 trading days for each month. That is, the 12-month return is actually a 252 trading days (12*21) return. R_{jt} = raw return for observation firm 'j' on day 't'. MR_t = return on the equally weighted or beta adjusted market index, the market capitalisation decile, or the industry-and-size matched firm on day 't'.

The average excess returns for each period are then:

$$\overline{ER} = \frac{1}{N}\sum_{j=1}^{N} ER_j$$

(b) Compare those returns to benchmark portfolio returns

Michaely *et al.* (1995) adapted buy-and-hold strategy and used CRSP equally weighted excess returns as the benchmark.

4.4.3.3. Comparison Period Return Approach (CPRA):

Test for statistically significant security price movement around dividend changes. Using monthly returns, Brown and Warner (1980) have shown the CPRA to be at least as powerful as market-adjusted approaches in detecting significant price movements for unclustered events. Masulis (1980a) noted that this conclusion is in even stronger when using daily returns due to the very low and often insignificant relationship of the market when applied on daily basis.

Mean daily returns around and on the event date are computed by averaging security returns by day. The means of return distributions for the event day and surrounding days are compared to ascertain the market's perception of dividend changes.

CPRA Process:

Given that the return generating process is stochastic in nature, a security's return (r_{it}) over time can be specified as:

$$\bar{r}_{it} = \mu_{it} + \bar{\varepsilon}_{it}$$

The expected return μ_{it} of a security is a function of a market-determined pricing process (in the spirit of the capital asset pricing model) and of a security's return characteristics. The stochastic error term (ε_{it}), which has an empirical value of zero and is serially correlated, reflects both market wide developments and security specific influences.

If returns are stationary over time, the impact (if any) of new information on security prices may be discovered through an examination of ε_{it}'s. To determine if the ε_{it}'s around an event date are nonzero, a test is conducted to determine if the mean daily return of the event period (observation period) is statistically different from the mean daily return of some other representative time period (the comparison period). The mean daily return for the comparison period is actually an estimate of μ_{it}, the expected daily return in the equation. To minimise error in the estimation of μ_{it}, portfolios of securities are formed in event time around the announcement dates. If security returns are independent and stationary over time with finite variances, portfolio daily returns in large samples approach normal distributions. Therefore, a student 't' for the difference in population means can be employed to test for equality of event period and comparison period mean returns.

T-statistics between comparison and observed period to test whether the returns (the mean daily returns (MDRs) and the mean percentage of daily returns greater than zero (MPRZ) for the days surrounding unexpected dividend increase (decrease) announcements) are significantly different from zero or not. Woolridge (1983) used this method in his empirical study.

4.4.3.4. Regression Model:

Stock price reaction relates positively to the size of dividend change (Asquith and Mullins, 1983; Ghosh and Woolridge, 1988). Eddy and Seifert (1992) investigated security price reaction to the announcement of dividend and their empirical evidence support the view that stock price response for the announcement of dividend is a positive function of percentage of dividend change. Abnormal stock returns for the changes of dividend are a function of size (percentage of change of common announcement). Therefore, the dependent variable is the abnormal return and the independent variable is the changes of dividends.

4.4.3.5. Mean Adjusted Returns Method:

Eddy and Seifert (1992), and Dhillon and Johnson (1994) use the mean-adjusted return technique to estimate abnormal price reaction to dividend or earnings announcements. Brown and Warner (1985) find that when announcements are unclustered, this technique works as well as or better than other procedures. This technique essentially compares the average returns of securities around an event (in this case the announcement) with the average returns of the same securities during a comparison period. Eddy and Seifert (1992) used standardised returns, Brown and Warner (1985) suggest using standardised returns instead of raw returns because the distribution becomes more like a t-distribution, and the power of the tests should be greater.

4.4.3.6. Justification of Choosing Data Analysis Technique in Empirical Part Three

The empirical phase of this thesis adapted the Measurement of Abnormal Performance with T-test approach. In this method it is calculated the abnormal returns for the event period and test whether the returns between the observation period and comparison period are significantly different from zero or not. The are four reasons that makes this approach more suitable for the current study:

(a) This method calculates abnormal returns (AR) by differentiating the actual returns and expected returns where expected returns calculate based on previous performance.

(b) Abnormal returns (AR) are the best reflection for the announcements

(c) T-test is the best way to compare mean.

(d) As the Dhaka Stock Exchange in an inefficient emerging market, so, it was important to conduct event study on a longer period, which this method helps to do.

4.4.4. Problems of Secondary Data Analysis:

In the data analysis stage, this study faced few problems. Basically those problems arise for many reasons including: (i) abnormal market fluctuation in 1996, (ii) both active and inactive companies are listed in the Dhaka Stock Exchange, (iii) different sizes of companies are listed in the Dhaka Stock Exchange, i.e., some companies are very big and some are very small, (iv) big difference in the payment of dividend, i.e., some companies pay very higher rate of dividends e.g., 200% -300% or even more and some others pay very lower rate of dividends e.g., 5% or even less. In the data analysis stage we mainly faced the outlier problems. It is found that in some cases outliers made a real difference. So, it is identified the cases where outliers played a vital role and it is simply excluded that particular case from the analysis in bringing normality in the variable. For example, when it is conducted descriptive analysis for the dividend pay-out ratio (dividend / operating income) with all companies then we got $\bar{X} = 0.8922$ and $\sigma = 15.0464$ but we found three outliers (Company ID 302 year 1994 = 370.19, Company ID 302 year 1992 = 291.67, and Company ID 613 year 1991 = 10.78), which were really overstating the average dividend pay-out ratio and also increasing the standard deviation. However, when it is excluded these outliers from the analysis then the $\bar{X}$ comes to 0.2001 and σ comes to 0.3672.

4.5. Conclusion:

The purpose of this chapter has been to explain the general research methodology considered and the suitability of choosing a specific method for this research. The first section of this chapter discusses the alternative research methods and justifies the choice of quantitative research method for this study. The second section of this chapter provides an explanation of the data and sample including sample selection criteria and secondary data collection procedure. This section, moreover, provides the data collection procedure for each and every area of research. At the end of this section, the major problem faced for collecting secondary data for this study are identified. The third section provides a brief outline of the secondary data analysis techniques for each of the three areas of research and justification of choosing a specific type of technique to analyse the collected data for handling the research problem. This chapter also describes the typical problems faced by the researchers to deal with emerging market secondary data including secondary data analysis.

Chapter Five: Review of Dividend Theories: Dividend Signalling, Tax Clientele, Agency Cost, Transaction Cost, Residual Theory, and Pecking Order Theory

5.0. Introduction:

Miller and Modigliani (1961) established the irrelevance of dividends in perfect capital markets. However, several theories have appeared in the literature that explains the payment of dividends and variations in dividend pay-out policy by focusing on market imperfections (Alli *et al.* 1993). All of those studies after Miller and Modigliani (1961) are basically concentrated and focused on the dividend theories, e.g., signalling information content of dividend, tax clientele of dividend, agency cost explanation of dividend, and transaction cost, residual theory, and pecking order theory of dividend.

This chapter reviews all of the dividend theories. The objectives of this chapter are threefold: one, to have a clear understanding about the dividend theories, two, to know the latest developments of dividend theories, and three, to develop the research questions regarding the applicability of the dividend theories in emerging markets.

The rest of the chapter is divided into two sections. The reviews of all the major dividend theories along with main argument, critical evaluations and empirical evidences, and opponent views are included in section 5.1. Section 5.2 contains a brief summary and concluding remarks.

5.1. Dividend Theories:

5.1.1. Dividend Signalling:

5.1.1.i. Introduction:

One of the most recent and faddish explanations of dividend pay-out in spite of differential tax rates has been dividend-signalling models. These models have been born out of the theory that dividends carry informational effects (Gerber, 1988). In fact, Miller and Modigliani (1961) were the first to introduce the hypothesis of *"information content of dividend."* They argue that when a firm follows a policy of dividend stabilisation,

investors may interpret a change in the dividend pay-out ratio as a change of management's views of the firm's future profitability.

Furthermore, Miller and Modigliani (1961) introduced the idea that dividends could convey information about future profitability. In addition, the extensive investigation of Griffin (1976), and Charest (1978) suggest that dividend payments do indeed convey information. More recently, Aharony and Swary (1980) report similar results after controlling for contemporaneous quarterly earnings reports. These studies indicate that announcements of dividend changes do convey information to the market. However, the question *'What information is contained in dividend announcements?'* has not been fully resolved.

5.1.1.ii. Main Argument:

The financial literature has related dividend to the firm's future profitability. Bhattacharya (1979) and Miller and Rock (1985) explain optimum dividend payments as signals of future profitability. Dividends always signal about the future earnings of the firm. Higher dividend payments signal about the higher future earnings and vice-versa.

The dividend announcement provides shareholders and the marketplace the missing piece of information about current earnings upon which their estimation of the firm's future (expected) earnings is based. The latter, of course, determines the current market value of the firm. In this respect, we can clearly see the role played by dividends. The dividend announcement provides the missing piece of information and allows the market to establish the firm's current earnings. These estimates are then used in predicting future earnings.

Firms usually do not like to reduce or eliminate dividend payments (Ghosh and Woolridge, 1988 and 1991), hence, they make announcements of dividend initiation or increases only when they are confident of keeping up with their good performance. Lintner (1956) and Fama and Babiak (1968) find a time-series relation between annual dividends and earnings that is consistent with the view that dividend-paying firms increase

their dividends only when management is relatively confident that the higher payments can be maintained. If managers have information about future and/or current cash flows that investors do not have, investors will interpret a dividend increase as a signal that management anticipates higher cash flows, and a dividend decrease as a signal that management expects permanently lower cash flows. The dividend signalling models developed by Bhattacharya (1979), John and Williams (1985), Miller and Rock (1985), and Denis *et al.* (1994) predict that dividend announcements convey information about future and/or current cash flows.

5.1.1.iii. Empirical Evidence:

Lintner (1956) provides empirical evidence that managers consider past as well as future earnings in setting current dividends. However, Pettit (1972) found that the market uses announcements of changes in dividends in evaluating a security. Pettit (1972) argues that his results are the justifications for management's fear of reducing dividends from one quarter to the next and of increasing dividends before they are confident that the new level can be maintained in the future.

The financial economists (Bhattacharya, 1979; Kane *et al.* 1984; John and Williams, 1985; and Miller and Rock, 1985) also mention that dividends can convey information about current and future level of earnings. However, Ross (1977) and Bhattacharya (1979) have argued that dividend policy could be employed as a signalling mechanism, whereby firms with profitable projects are able and willing to pay higher dividends in order to segregate themselves from firms with less profitable projects. They provide a rationale for value maximising firms paying positives when the risk premiums per unit of dividend yield is positive in equilibrium. Stern (1979) has argued that such information signalling via dividends is excessively costly. Makhija and Thompson (1986) have used Bhattacharya's (1979) signalling model. This model is also used by Ross (1977), and follows Spence (1974). Makhija and Thompson (1986), however, bring out the pivotal role of the characterisation of the cross-section of the firms and show that dividend and profitability of the least and the most profitable firms affect the nature and feasibility of such signalling equilibrium. Makhija and Thompson (1986) argue that, for dividends to

signal profitability, both the least and most profitable firm must satisfy conditions that have not been recognised in the literature.

In addition, Jensen *et al.* (1992) mentioned business risk as the key indicator of future profitability. Greater business risk makes the expected direct relationship between current and expected future profitability less certain. Therefore, they hypothesised that greater business risk will be associated with lower dividend payments. However, Gerber (1988) found strong support of past earnings uncertainty for the measurement of ex-ante earnings uncertainty.

5.1.1.iv. Opponent View:

Despite the significant number of studies document that dividends convey information (Pettit, 1972; Aharony and Swary, 1980; and Asquith and Mullins, 1983), there is still considerable controversy about what dividends actually signal. Empirical results by Watts (1973), Gonedes (1978), and Penman (1983) indicate that dividends are not good predictors of firm's future earnings. However, using a theoretical model, Kumar (1988) shows that changes in dividends signal changes in the firm's prospects, but they, per se, are very weak predictors of earnings. Moreover, Kalay (1979c) proposed a test of the relationship between a firm's pay-out rate and the uncertainty of earnings but he found no evidence that pay-out ratios are related to earnings uncertainty. In addition, Friend (1986) views that management is very reluctant to cut dividends which ensures that dividends are likely to be a relatively insensitive signal of changes in earnings. Friend (1986), however, points to strong empirical evidence against the signalling explanation of dividend pay-out.

While, many theorists hypothesise that managers use dividends to signal their views of future earnings prospects (Miller and Modigliani, 1961; Bhattacharya, 1979; John and Williams, 1985; and Miller and Rock, 1985), DeAngelo *et al.* (1996) assess the empirical importance of dividend signalling in a sample of 145 NYSE corporations whose annual earnings decline after nine or more consecutive years of growth and they employ a variety of model specifications and definitions of favourable dividend actions to assess the

empirical importance of dividend signalling in their sample but their tests yield no indication that favourable dividend decisions represent reliable signals of superior future earnings performance for these firms. However, DeAngelo *et al.* (1996) observe a similar pattern of disappointing future earnings for various sub-samples in which managers announce especially large dividend increases. DeAngelo *et al.* (1996) also investigate a variant of the dividend-signalling hypothesis in which dividend decisions conform to a separating equilibrium: managers of firms with relatively good prospects use dividend increases to differentiate their companies from other firms in seemingly similar situations that have comparatively poor prospects. Almost all of their (DeAngelo *et al.* 1996) evidence is inconsistent with this separating equilibrium argument.

In addition, DeAngelo *et al.* (1996) explore six possible explanations why sample firms' favourable dividend actions are not informative signals of future prospects:

(i) Current earnings are so informative about future earnings that there is little additional useful signalling content to non-earnings sources.

(ii) Managers reduce capital outlays, so that the dividend increases are primarily free cash flow payoffs rather than favourable signals about future earnings.

(iii) The dividend increases are lagged responses to prior earnings increases, not favourable signals about future earnings.

(iv) Managers mistakenly send favourable dividend signals, but these mistakes are understandable given the information available at the time.

(v) Because managers tend to be overly optimistic about company growth, they send signals that are overly optimistic about future earnings.

(vi) Managers make only modest cash commitments when they increase dividends, which undermine the reliability of such signals.

DeAngelo *et al.'s* (1996) evidence does not support (i) through (iii), but does suggest that (v) and (vi), and perhaps (iv), can help explain their findings. Although (iv) does not apply systematically, it does have merit for a few sample firms. Regarding (v), they find evidence that Jensen's (1993, pp. 847-848) behavioural hypothesis - that managerial and corporate culture often make managers overly optimistic about continued

growth - helps explain why many sample firms increase dividends when earnings growth ends. Their (DeAngelo *et al.* 1996) findings offer almost no support for the signalling hypothesis and, when taken together with the findings of prior studies, raise serious doubts about the general empirical importance of dividend signalling. However, DeAngelo *et al.'s* (1996) conclusions are close to Watts (1973) who examined a random sample of dividend changes and concludes that, at best, dividends have trivial information content about future earnings. A number of studies do find evidence supportive of signalling, but they either focus on dividend decisions in unusual contexts or, consistent with Watt (1973), suggest that the magnitude of any signalling effect is trivial.

Eades (1982), Rozeff (1982), and Kale and Noe (1990) mentioned that dividends might also signal the riskiness of the firm's cash flow. However, Kale and Noe (1990) developed a two-period model for this type of signalling and demonstrate that firms with less volatile future cash flows pay higher dividends. Moreover, Alli *et al.* (1993) tested the relationship between volatility of cash flows and payment of dividend and view that if all other dimensions are taken into account dividends may not be very effective in signalling the volatility of cash flows.

5.1.1.v. Conclusion:

In spite of the considerable controversy about what dividends actually signal, several empirical studies support the signalling argument of dividend that dividends always signal about the future earnings of the firm (John and Williams, 1985; and Kane *et al.* 1984) and more obviously Bhattacharya's (1979) and Miller and Rock's (1985) explanation of dividend signalling that optimum dividend payment signals future profitability. Bhattacharya (1979), John and Williams (1985), and Miller and Rock's (1985) signalling models predict that announcements convey information about future and/or current cash flow. Moreover, this prediction is not supported by the empirical studies of Watts (1973) and Gonedes (1978), who are unable to find a significant relationship between dividends and subsequent earnings. Further, they find that current and past dividends forecast future earnings no more accurately than do current and past earnings. A more recent study by Ofer and Siegel (1987), in contrast, find that knowledge of dividend announcements does

improve the accuracy of the average analyst's pre-announcement forecasts of future earnings.

5.1.2. Tax Clientele:

5.1.2.i. Introduction:

Brennan (1970) first introduced taxes into Capital Asset Pricing Model (CAPM) and developed the after tax pricing equation. In a later and often cited paper, Litzenberger and Ramaswamy (1979) generalised Brennan's model. Both models represent single period mean-variance pricing equations with adjustments for differential taxation between dividend and capital gains.

However, the school of thought which favours lower dividends, Brennan (1970), Litzenberger and Ramaswamy (1980), bases its case on the view that dividends are less desirable than capital gains because they are more heavily taxed.

5.1.2.ii. Main Argument:

The tax clientele argument postulates that investors in low tax brackets prefer high dividend paying stocks when compared to investors in high tax brackets (Brennan, 1970; Elton and Gruber, 1970; Long, 1978; Litzenberger and Ramaswamy, 1979; and DeAnglo and Masulis, 1980).

As the individual's personal tax rate on dividend is higher than capital gain tax rate, clientele investors may prefer capital gain to dividend. If the tax rate induce investors to favour capital gains over dividends, then the investors should pressure the management to reinvest rather than pay-out earnings.

5.1.2.iii. Empirical Evidence:

Litzenberger and Ramaswamy (1979) tested their model on monthly US data from 1931-1977 and their results support the theory that there is a differential tax impact on dividends over capital gains. However, Alli *et al.'s* (1993) findings also support tax

clientele argument of dividend that if the dividend is taxed in a higher rate than capital gains, the investors who are in higher tax brackets prefer low yield stocks and vice-versa.

Moreover, Blume *et al.* (1974) showed that taxes affect the portfolio mix of investors. In contrast, Black and Scholes (1974) were unable to show whether investors who prefer dividends or those who prefer retained earnings had a strong effect on setting stock prices. But Farrar and Selwyn (1967) showed that with ordinary and capital gain taxes the policy of paying zero dividends maximises share value.

Black and Scholes (1974), however, concluded that it is not possible to demonstrate that the expected returns of high yield stocks differ from the expected returns on low yield stocks either before or after taxes. In spite of the ambiguous implication for the after tax CAPM, Black and Scholes (1974) have frequently been cited as providing evidence against the existence of tax effects. Masulis and Trueman (1988) explore implications of differential personal taxation for corporate investment and dividend decisions. The personal tax advantage of dividend deferral causes shareholders to generally prefer greater investment in real assets under internal as opposed to external financing. Furthermore, dividend deferral is shown to be costly at the corporate level, causing shareholders in different tax brackets at times to disagree over optimal investment and dividend policies under internal financing. The profitability of internally financed security investment is shown to depend on a security's tax status and shareholders' tax brackets. However, externally financed security purchases are unprofitable from a tax standpoint.

The preferential treatment of capital gain and dividend in taxation obviously shows the investors' preference for capital gain instead of cash dividend. Litzenberger and Ramaswamy (1979) and Miller and Scholes (1982) found that the investors in the higher tax bracket prefer low yield stocks.

Litzenberger and Ramaswamy (1980) derived a model of asset prices in the presence of short selling restrictions together with a much simplified taxation scheme with individuals in diverse but constant marginal tax brackets. The implication of the model is

that the differences in tax brackets in the presence of short selling restrictions would induce dividend clienteles, with the tendency of low (high) tax bracket individuals to hold high (low) dividend yield stocks: covariances among individual securities as well as the levels of yields determine the clientele that holds a given security. Thus the existence of short selling restrictions leads to mitigate the tax effects of dividend changes since a corporation that attempts a sizeable dividend cut would affect the clientele that holds the stock, and the associated coefficients on dividend yield would increase.

One of the central questions in corporate finance is whether investors prefer to receive their pay-outs from corporations in the form of cash dividends or as capital gains. The conventional wisdom is that investors dislike cash dividends because of the tax disadvantages associated with them. On the other hand, it has been argued that cash dividend have positive benefits that offset their tax disadvantage.

Long (1978) was the first to exploit this opportunity, providing evidence that investors prefer cash dividends over stock dividends of equal value. His evidence contradicts the conventional wisdom that investors prefer capital gains to dividend income because the different tax treatment of income. However, Poterba (1986) suggests that investors are indifferent between cash dividend and stock dividend of equal amounts. On the other hand, Thaler and Shefrin (1981) and Shefrin and Statman (1984) said that investors prefer cash dividend because of self-control reasons.

5.1.2.iv. Opponent View:

Venthienen and Vermaelen (1985) and Poterba and Summers (1984) view that taxes seem to be an important determinant of security market equilibrium. However, Friend (1986) states that while the results found by Venthienen and Vermaelen (1985) do not come as a surprise and he accepts the results of Venthienen and Vermaelen that persons with controlling interests in the firm were the investors who were willing to pay a large premium to avoid dividend taxes. Friend argued that while some investors would have high enough incomes that want to avoid additional tax, it is irrelevant whether these investors have controlling interest.

Masulis and Trueman (1988) specify conditions under which the controlling shareholders will prefer greater dividends than other shareholders in the same tax bracket. However, Friend (1986) shows no relationships when other variables affecting pay-out are included in the analysis. Friend also suggest that Venthienen and Vermaelen are misinformed when they suggest that it is easy to launder out taxes on investment income in the US as they cited examples of given by Miller and Scholes (1978). However, direct evidence on the limited use of tax avoidance devices is provided by Feenberg (1981) and by Peterson and Ang (1985).

More recent studies have documented that clienteles may not depend on taxes alone. While Chaplinsky and Seyhun (1990) find that tax deferred and tax exempt dividend recipients accounted for half of all dividends in 1979, significant dividends were still subject to taxes. However, Sterk and Vandenbery (1990) find a preference for cash dividends despite the elimination of different tax rates between capital gains and dividend income in 1986. DeAnglo (1991) argues that an equilibrium consistent with dividend pay-out may exist even in the presence of a tax system that favours capital gains. Brennan and Thakor (1990) also present an equilibrium model where dividends exist for small distributions despite the preferential tax treatment of capital gains.

However, the empirical evidence has failed to convincingly support the existence of a tax-induced preference for lower dividends (Miller and Scholes, 1982). In addition, Gerber (1988), and Partington's (1989) findings also disagree with tax clientele argument.

However, Blume (1980) finds a positive and significant coefficient on dividend yield, but he argues that tax effects alone could not explain his results. Instead, he suggests that the market failed to anticipate the greater relative growth of dividends for high yielding stocks as compared to lower yield stocks.

Furthermore, Hess's (1981) empirical results indicate that the relationship between dividend yields and stock returns are not significant and more importantly, constant across

securities which conflicts with some of the evidence provided by the tax effect models of Brennan (1970); Litzenberger and Ramaswamy (1979); and similar model by Blume (1980).

Gordon and Bradford's (1980) findings are consistent with the maximising behaviour of the firm but not with maximising behaviour of investors. Although the result that payment of dividends in a world of differential taxation is the outcome of rational firm maximisation behaviour is encouraging from the financial theory viewpoint.

Finally, early investigators of the tax clientele effect were indirect tests of tax clientele argument and have been criticised by Miller and Scholes (1982) because of their extreme sensitivity to the definition to the dividends.

5.1.2.v. Conclusion:

Despite the strong argument against tax clientele theory from different studies, several studies conducted on tax clientele theory support the argument that investors in low tax brackets prefer high dividend paying stocks when compared to investors in high tax brackets (Brennan, 1970; Elton and Gruber, 1970, Long, 1978; Litzenberger and Ramaswamy, 1979; and DeAnglo and Masulis, 1980). And more importantly, the empirical evidences support the argument that if dividend is taxed in a higher rate than capital gains, the investors who are in the higher tax brackets prefer low yield stocks.

5.1.3. Agency Cost:

5.1.3.i. Introduction:

Agency cost is the cost that arises for the conflict between shareholder-manager. The payments of dividend reduce the agency problem between manager and shareholder because dividend payments reduce discretionary funds available to managers (Jensen and Meckling, 1976; Rozeff, 1982; Easterbrook, 1984; Crutchley and Hansen, 1989; Jensen *et al.* 1992; Alli *et al.* 1993; Saxena, 1999; and Mollah *et al.* 2000). However, Jensen's (1986) free cash flow hypothesis views that agency cost also arises for free cash flow because free cash flow motivates the managers to take negative net present value projects.

Besides, agency cost also arises for the conflict between shareholder-bondholder because shareholders can expropriate wealth from bondholders by paying themselves dividends.

5.1.3.ii. Shareholder-Manager Conflict and Agency Cost:

5.1.3.ii.a. Main Argument:

Dividend can be used in reducing the agency problem between managers and stockholders. The payment of dividends reduces the discretionary funds available to managers for perquisite consumption and helps address the manager-stockholder conflict (Jensen and Meckling, 1976; Easterbrook, 1984; and Crutchley and Hansen, 1989).

5.1.3.ii.b. Empirical Evidence:

Easterbrook (1984) views that firm pay-out dividends in order to reduce agency costs because payment of dividends reduces the discretionary funds available to managers. However, Rozeff (1982) was among the first to explicitly recognise the role of insiders as one of monitoring the managers. Firms establish higher dividend pay-outs when insiders hold a lower fraction of the equity and / or greater number of stockholders own the outside equity. This evidence supports the view that dividend payments are part of the firm's optimum monitoring / bonding package and serve to reduce agency costs.

Alli *et al.* (1993), however, explained that as the number of stockholders increases, the agency problem becomes more severe, the need for monitoring managerial actions also increases and managers need to pay more dividends to reduce agency problem. However, higher insider ownership leads to lower agency problems, hence, low dividend pay-out.

Crutchley and Hansen (1989) examine the relationship between ownership, dividend policy, and leverage and conclude that managers make financial policy trade-off to control agency costs in an efficient manner. However, Jensen *et al.* (1992) linked the interaction between financial policies (dividend and leverage) and insider ownership to informational asymmetries between insiders and external investors. They found that corporate financial decisions and insider ownership are interdependent.

Furthermore, there is a relation between firm's transaction cost and agency cost. If the firm pays higher amount of dividend that reduces firm's agency cost as well as firm's needs to raise external funds for investment, which rises firm's transaction costs. Rozeff (1982) attempts to trade-off between transaction costs and firms agency costs. Rozeff hypothesise that as outside equity holders own a larger share of the equity, they will demand a higher dividend as part of the optimum monitoring package and if insiders own the major portion of equity then they will have more power and in that case the company usually pay less dividends. Rozeff (1982), finally, concluded that higher dividend payments reduce agency conflicts between managers and shareholders.

However, Jensen *et al.* (1992) investigated the determinants of dividend policy within a common empirical framework and identified insider ownership is one of the most influential determinants of dividend policy. They hypothesise that if the insider owners hold the major share of the company then management naturally prefers not to declare more dividends but increases directors fees and so on. On the other hand, Miller and Rock (1985) argue that insider ownership is relevant to assessment of dividend signals.

Saxena (1999) investigated the determinants of dividend policy of NYSE listed 235 unregulated and 98 regulated firms and he found a strong influence of agency costs on dividend policy. In addition, Holder *et al.* (1998) investigated the relationship between dividend policy decisions and investment decisions of the firms of 477 NYSE listed companies and he also found a very strong influence of agency costs on dividend policy decision of the firm. Both Saxena (1999) and Holder *et al.*'s (1998) results are very much consistent with Rozeff's (1982) empirical evidences.

Easternbrook (1984), on the other hand, observed whether dividend reduces agency costs of management but his findings are to some extent different from others. He found that dividend may keep firms in the capital market, where monitoring of managers is available at lower cost, and may be useful in adjusting the level of risk taken by managers and the different classes of investors. However, Jensen and Meckling (1976) investigated whether the theory of agency, the theory of property rights, and the theory of

finance help to develop a theory of the ownership structure of the firm. They pointed out that agency costs are as real as any other costs and there were strong incentives for individuals to minimise agency costs.

5.1.3.iii. Free Cash Flow and Agency Cost:

5.1.3.iii.a. Main Argument:

Jensen (1986) views that if firm has free cash flow, it is better off sharing them with shareholders as dividend pay-out or retire the firm's debt in order to reduce the possibility of these funds being wasted on unprofitable (negative net present value) projects.

5.1.3.iii.b. Empirical Evidence:

Dividend initiation can reduce agency costs because they reduce free cash flow available to managers. The potential for reduced agency costs should be greater for those firms that tend to use funds inefficiently. Given the previous performance serves as proxy for efficiency in allocating funds, the relatively poor performance have more potential to reduce agency costs following dividend initiations. On the other hand, dividend omissions can increase agency costs because they enlarge the free cash flow available to managers. However, the financial condition of firms at the time of a dividend omission may limit the degree to which agency costs can rise. Since many firms only omit dividends after experiencing financial problems, the funds retained rather than distributed, as dividends should be closely monitored. Agency costs are more likely to increase following a dividend omission if the firm's previous performance has not triggered closer monitoring of managers. That is, relatively poor performance prior to the dividend omission should automatically heighten monitoring of the firm's managers, while relatively strong performance prior to the dividend omission enlarges free cash flow without necessary triggering closer monitoring of the firm's managers (Akhigbe and Madura, 1996).

Jensen's (1986) "free cash flow" hypothesis indicates that when a firm has cash in excess of what is required to finance positive-net present value (NPV) investment projects, it is better for managers to return the excess cash to shareholders as dividends in order to maximise shareholders wealth. Otherwise, he argues, the existence of free cash flow may

lead management to undertake sub-optimal investment projects. Moreover, Lang and Litzenberger (1989) called the extended form of the free cash flow hypothesis *'the overinvestment hypothesis'*.

Lang and Litzenberger (1989) investigated the informational content of dividends in the framework of the principal-agent conflict model developed by Berle and Means (1932) and extended by Jensen (1986). Lang and Litzenberger (1989), however, re-examines the dividend announcements to determine whether the free cash flow has explanatory power and they conclude that free cash flow has explanatory power.

At the heart of Jensen's (1986) free cash flow theory lies the agency problem of managers and shareholders over the distribution of free cash flows generated by the firm. Howe *et al.* (1992), on the other hand, attempt to provide an extension of Lang and Litzenberger's (1989) dividend results to a broader set of cash transactions in which the cash distribution is not expected to be repeated. The transactions chosen are tender offer share repurchases and specially designed dividends (SDDs). Howe *et al.* (1992) analyses the effect of infrequent or one-time cash distributions to determine whether Jensen's free-cash flow hypothesis explains the market's reaction to an expanded set of transactions. Their result indicates that there is no statistically significant difference in two-day abnormal returns between high-Q and low-Q firms announcing tender offer repurchases or SDDs. Their interest in this result stems from its contrast with the findings of Lang and Litzenberger (1989), which generally support Jensen's free cash-flow theory. In Lang and Litzenberger's study, high-Q and low-Q firms exhibit markedly different responses to announcements of dividend changes. Dividend increases by low-Q firm's result in a more positive market reaction because these firms, which tend to overinvest, would subsequently have less cash flow to waste.

5.1.3.iv. Shareholder-Bondholder Conflict and Agency Cost:

5.1.3.iv.a. Main Argument:

Similar type of conflict like shareholder-manager also exists between shareholder and bondholder. Shareholders may expropriate wealth from bondholders by paying

themselves dividends; so, bondholders try to contain this problem through restrictions on dividend payments in the bond indenture (Kalay, 1982a; and Smith and Warner, 1979).

5.1.3.iv.b. Empirical Evidence:

Titman and Wassels (1988) argue that firms that hold more collateralizable assets have fewer agency problems between their bondholders and stockholders because these assets may serve as a collateral against borrowing. Collateralizable asset is the security of the bondholders. As higher levels of collateralizable assets indicate higher levels of protection for bondholders, so, in that case firm's face lower levels debt indenture and consequently that also reduces the conflict between shareholder-bondholder. Therefore, firms with lower levels of conflict between shareholder-bondholder can pay more dividends. However, Alli *et al.* (1993) investigates the agency problem between shareholders and bondholders and they found strong evidence that the conflict between shareholder and bondholder causes agency cost and that affects the dividend policy of the firm.

However, La Porta *et al.* (2000) view that agency cost arises for the lack of protection of the outside investors because controlling shareholders or managers expropriate funds by maximising their own benefits. Expropriation can take a variety of forms. In some instances, the insiders simply steal the profits. In other instances, the insiders sell the output, the assets, or the additional securities in the firm they control to another firm they own at below market prices. Such transfer pricing, asset stripping, and investor dilution, though often legal, largely has the same effect as theft. In still other instances, expropriation takes the form of diversion of corporate opportunities from the firm, installing possibly unqualified family members in managerial positions or overpaying executives, and undertaking wasteful projects (Mollah *et al.* 2000). In general, expropriation is related to the agency problem described by Jensen and Meckling (1976), who focus on the consumption of "perquisites" by managers and other types of empire building. It means that the insiders use the profits of the firm to benefit themselves rather than return the money to the outsider investors. La Porta *et al.* (2000), therefore, suggested

that the corporate governance is, to the large extent, a set of mechanism through which outside investors protect themselves against expropriation by the insiders.

5.1.3.v. Conclusion:

Therefore, it can be concluded that the previous empirical evidences support that agency cost arises for the conflict between shareholder-manager and shareholder-bondholder, i.e., basically for the lack of protection of outsiders, and for free cash flow. However, the previous studies suggest that payment of dividend reduces the agency costs arises for the conflict between manager and shareholder, shareholder and bondholder, and for free cash flow.

5.1.4. Transaction Cost, Residual Theory, and Pecking Order Theory:

5.1.4.i. Introduction:

Transaction cost is the cost of external financing. As external financing costly, the firms with higher amount of external financing face heavy burden of transaction costs. However, higher burden of transaction cost reduces the capability of paying dividends. Higher growth rates of the firm create higher levels of investment demand and in that case firm should manage appropriate funding to maximise shareholders wealth. Moreover, as we have been mentioned earlier that external financing is costly and on the other hand, internal financing is very cheap and easily accessible, so, firms prefer to use their internally generated funds and the remainders they use for paying dividends. Therefore, higher investment reduces the capability of paying dividends.

5.1.4.ii. Main Argument:

5.1.4.ii.a. Transaction Cost:

If issuance costs are significant the firms are likely to finance investments through extension of earnings rather than from external sources to the extent that dividends complete with investments for internally generated funds. Increased dividends raise the transaction cost of external financing. These costs are likely to affect dividend policy (Fama, 1974; and Higgins, 1972).

5.1.4.ii.b. Residual Theory:

Residual theory postulates that a firm will pay dividends only when its internally generated funds are not completely used up for investment purpose. According to the 'residual dividend theory', a firm will pay dividends only if it does not have profitable investment opportunities, i.e., positive net present value projects (Saxena, 1999).

5.1.4.ii.c. Pecking Order Theory:

Pecking order argument of Myers and Majluf (1984) views that firms experiencing high growth rates generally have large investment requirements and these firms should be characterised by low pay-out ratios. Donaldson (1961) first introduced pecking order theory as a theory to explain observed financial behaviour of firm. Myers (1984) and Myers and Majluf (1984) proposed a modified version of the theory. These results revised the theory and suggested those informational asymmetries and bankruptcy costs also influence the firm's capital structure choice.

5.1.4.iii. Empirical Evidence:

Highly levered firms are more profitable for the residual owners than firms with low leverage (Gillespie, 1971). Higgin (1972) also mention the influence of debt financing. However, McCabe (1979) reported that new long-term debt has a negative influence on the amount of dividends paid. Fund requirements for investment purposes influence dividend pay-out ratio (Higgins, 1972). Investment influence dividend policy is not universal, Fama (1974) being a conspicuous exception.

Firms establish lower dividends when they are experiencing or anticipate experiencing higher revenue growth, presumably because this growth entails higher investment expectations. The investment influencing dividend policy because external finance is costly. Firms establish lower dividends when they posses higher beta coefficients, presumably because higher betas are a reflection of the presence of higher operating and financial leverage. Higher level of operating and financial leverage demands higher fixed charges, which leads to lower the dividend payments to avoid the costs of

external financing. Beta reflects the level of operating and financial leverage (Lev, 1974; and Hamada, 1971).

Variables such as rate of asset expansion, and the attractiveness of new investment opportunities have the potential to influence the level of dividends. Dhrymes and Kurz (1964) concluded that dividend payments are affected by factors such as firm's investment programme its state of indebtedness, and its size. However, financing variables such as level of leverage, the level of financing required, and the cost of finance (Pouge, 1971) may affect a firm's capacity to pay dividends.

Moreover, it is hypothesised that if a firm has higher levels of operating and financial leverage, other things being equal, the firm will choose a lower dividend pay-out to lower its costs of external financing. A natural surrogate for operating and financial leverage is the firm's beta coefficient. The role of beta is reflecting operating and financial leverage is well known (Lev 1974, and Hamada 1971). Beta is higher insofar as a firm has higher operating and financial leverage (Rozeff, 1982).

Investment opportunity or growth of the firm is the major determinant of dividend policy. If the firm has available investment opportunities then the company will prefer to reinvest the funds rather than paying dividends to shareholders.

Investment and growth opportunity faced by a firm should also affect dividend policy. Myers and Majluf (1984) argue that profitable firms with good investment opportunities may be forced to choose between dividend payments and capital expenditures when capital market frictions are important. Frictions in the capital market leads to a sort of competition between dividends and investment projects as potential use profits. This competition can explain why high growth firms with strong investment opportunities often pay low dividends.

Higgins (1972) point out that firm's requirement of funds for investment purposes is an influential factor to determine dividend. This agreement that investment influences

dividend policy is not universal, Fama (1974) being a conspicuous exception. Rozeff (1982) defined the variable investment as the realised growth rate of firm's sales revenue and the Value Line's forecast of growth of firm's sales revenue and hypothesised that dividend pay-out is negatively related to both past growth of revenues and predicted future growth of revenues of the firm. Value Line's forecast of growth is a measure of the management's expectations of growth. Rozeff (1982), however, found that dividend pay-out has a significantly negative function with the firm's past and expected future growth rate of sales.

One question often raised is whether investment policy influences dividend policy. The answer reported here is "yes", in the sense that holding other factors constant, firms with greater investment, as measured by greater current and prospective growth rates of revenues, have lower dividend payoffs. Jensen *et al.* (1992) has also got significantly negative relation between firm's investment and dividend policy. Miller and Modigliani (1961), Modigliani and Miller (1959), and Lintner (1956) state that future prospects of the company are the influential determinant of dividend policy. But Watts (1973) finds very lower levels of positive relation between expected earnings and dividend changes. A comprehensive theory might also have implications for relationships recognised in the past literature, e.g., the purported negative correlation between dividends and both investment opportunities and risks (Joy 1980). Smith and Watts (1992) find that measures of the firm's investment opportunity set (such as the availability of growth options and firm size) are related to its financing, dividend, and executive-compensation policies. In particular, they document that firms with more growth options (i.e., greater access to positive net present value projects) have lower leverage, lower dividend yields, higher compensation, and greater use of stock -option plans.

Firm's debt financing is also an important factor to determine dividend policy (Higgins 1972). McCabe (1979) also reported that new long-term debt has a negative influence on dividend policy. Abeyratna *et al.* (1996) identified that a levered firm should have to bear the burden of long term debt as well as the firm should have to pay a large amount of interest for the long-term debt. Abeyratna *et al.* (1996) also viewed that the

more levered firm should have to pay a large amount of interest each and every year, which reduces the distributable profits. They stated a negative relation between leverage and dividend policy. On the other hand, there are some opposite views that the earnings per share of a levered firm and an unlevered firm varies to a large extent because the levered firm enjoys the facility of tax shield if the firm has made profit in that year. The amount of additional earnings due to tax shield in a levered firm is higher than that of an unlevered firm. As it is considered that the rate of return on capital employed is greater than rate of interest charged on debt, consequently, the earnings per share of the levered firm will increase as compared to that of unlevered firm. This enable levered firm to pay more dividends, ceteris paribus. Smith and Watts (1992), however, find that regulated firms have higher leverage, higher dividend yields. In contrast, Jensen *et al.* (1992) also shows the negative relation between long-term debt and dividend. Wansley and Lane (1987) view that there is a negative relation between long-term debt and interest expense and dividend. On the other hand, DeAnglo and DeAnglo (1990), Chowdhury and Miles (1987), Lonie *et al.* (1992) state a positive relation between high interest expense and dividend cut.

Typically, with debt instruments, the debt indenture refers to debt covenants which imply certain restrictions on the management's freedom of action with regard to some aspect of the firm's behaviour, viz., restriction on the magnitude of dividend payments, restriction on the cash dividend payment without the payment of interest. A levered firm having a debt indenture faces more constraints in paying dividends as compared to a levered firm without any debt indenture. Jensen and Meckling (1976) and Myers (1977) demonstrate, stockholders can choose to finance dividend payments by rejecting investment projects with positive net present value (NPV). These potential costs associated with the conflict can be reduced (or avoided) by stockholders' precommitment to limit the level of future dividend payments. The above rationale for the existence of dividend constraints is suggested in the financial literature (Jensen and Meckling, 1976; Myers, 1977; Smith and Warner, 1979; and Kalay, 1979a and 1979b), although the exact form of the constraint, the detail of its properties, its variations across firms and the extent to which it is likely to be binding, are yet to be documented. As Kalay (1982) reports,

dividend constraints usually define an inventory of funds available for dividends (inventory of payable funds or IPF or unrestricted retained earnings) over the life of the debt. The sample of bond indentures studied by Kalay (1982) reveals that dividend payments are constrained directly as well as indirectly.

Long *et al.* (1994), on the other hand; empirically examine the underinvestment problem and the use of dividends to expropriate lenders' wealth. Rather than analysing the market's reaction to potential wealth expropriating events, a different aspects of potential conflicts of interest is addressed: do managers who control dividends act in a manner consistent with wealth expropriation? If so, then debt issues should be followed by increase dividends. Long *et al.* (1994) has used two samples of firms: those issuing straight debt and those issuing convertible debt. They find no evidence that firms manipulate dividend policy to transfer wealth from the bondholders to shareholders.

Underinvestment, identified by Myers (1977), occurs when owners fail to accept investments with a positive net present value (NPV) because some of that value will accrue to the holders of risky debt. Bondholders are assumed to anticipate underinvestment and price the debt accordingly so those shareholders bear the resulting loss in firm value. The limitation of distributions to shareholders (dividend constraint) is regarded as a means of controlling underinvestment.

5.1.4.iv. Opponent View:

Pouge (1971) concluded that the effect of financing variables was very small in comparison to the effect of profitability. However, Huberman (1990) argues that even in the presence of transaction costs, dividend policy may be irrelevant.

However, Dhrymes and Kurtz (1967) concluded that there is interdependence between dividend and investment but Fama (1974) conclude that there is no evidence of interdependence. On the other hand, they (Dhrymes and Kurtz, 1967) concluded that there was a financing effect, but their methodology was strongly criticised by Fama (1974).

5.1.4.v. Conclusion:

In spite of the opponent views against transaction cost, residual theory, and pecking order theory, several previous empirical studies strongly support the arguments of these theories that if issuance costs are significant the firms are likely to finance investments through extension of earnings rather than from external sources and firms will pay dividends only when its internally generated funds are not completely used up for investment purpose. Therefore, growth firms generally have large investment requirements and these firms should be characterised by low pay-out ratios. However, the empirical evidence suggests a strong influence of transaction cost, residual, and pecking order theory on dividend policy (Alli *et al.* 1993).

5.2. Conclusion:

Several theories have appeared in the literature after Miller and Modigliani's (1961) dividend irrelevance and most of the studies are concentrated on the main dividend theories (signalling information content of dividend, tax clientele of dividend, agency cost explanation of dividend, and transaction cost, residual theory, and pecking order theory of dividend). While the few researchers provide evidence against the dividend theories, several studies document very strong findings in favour of the dividend theories including: (a) dividends always signal about the future earnings of the firm, (b) investors in low tax brackets prefer high dividend paying stocks when compared to investors in high tax brackets, (c) the payment of dividends reduces the discretionary funds available to managers for perquisite consumption and helps address the manager-stockholder conflict, and (d) if issuance costs are significant the firms are likely to finance investments through extension of earnings rather than from external sources to the extent that dividends complete with investments for internally generated funds.

The major research questions arise through the review of the dividend theories are:

(1) is there any applicability of dividend theories in the emerging markets, and

(2) if so, then what are applicability of dividend theories in emerging markets?

Chapter Six: Determinants of Dividend Policy in an Emerging Market: Evidence from the Dhaka Stock Exchange.

6.0. Introduction

Since Miller and Modigliani (1961) established the irrelevance of dividends in perfect capital markets, several theories have appeared in the literature that explain the payment of dividends and variations in dividend pay-out policy by focusing on market imperfections (Alli *et al.* 1993). All of those studies are concentrated on the following categories: (a) signalling information content of dividend, (b) tax clientele of dividend, (c) agency cost explanation of dividend, and (d) transaction cost, residual theory, and pecking order theory of dividend.

This chapter investigates the dividend policy of companies listed on the Dhaka Stock Exchange to identify the determinants of dividend pay-out ratio in an emerging market. Ordinary Least Square models are tested by taking all of the dividend theories (dividend signalling, tax clientele, agency cost, transaction cost, residual, and pecking order theory) into account on the Dhaka Stock Exchange data over the period of 1988-1997 for this study- on which no other study has been conducted yet. The empirical results strongly support the agency cost theory and transaction cost theory of dividend. However, the empirical results identified insider ownership, collateralizable assets, leverage, and size as the major determinants of dividend policy in an emerging market.

The rest of the chapter is divided into four sections. The review of dividend theories along with major empirical evidence for identifying the determinants of dividend pay-out ratio, a brief summary of the remarkable previous empirical studies on determinants of dividend policy including the methodology, data used and the notable findings, and an explanation how the analysis will distinguish between the dividend theories are included in section 6.1. Section 6.2 contains the description of data and sample, selection of variables, and the methodology of the empirical analysis. The empirical results are reported in section 6.3. Finally, the summary and the concluding remarks are incorporated in section 6.4.

6.1. Theoretical Background

This part of the chapter contains a brief review of dividend theories along with the major empirical evidence for and against the dividend theories, identification of the determinants of dividend pay-out ratio in connection with each and every theory of dividend, a brief summary of the major studies on determinants of dividend policy including the methodology, data used and the notable findings (Table 6.1), and an explanation how the analysis will distinguish between the dividend theories.

6.1. A. Dividend Signalling

One of the most recent and faddish explanations of dividend pay-out is the dividend signalling. Dividend signalling was born out of the theory that dividends convey information (Pettit, 1972; Aharony and Swary, 1980; Asquith and Mullins, 1983; and Bar-Yasef and Huffman, 1986). In fact, Miller and Modigliani (1961) were the first to introduce the hypothesis of the *"information content of dividend."*

In spite of the considerable controversy about what dividend actually signal, Bhattacharya (1979), Kane *et al.* (1984), John and Williams (1985), and Miller and Rock (1985) view that dividend can convey information about current and future level of earnings.

However, the empirical results of Watts (1973), Gonedes (1978), and Penman (1983) document that dividends are not good predictors of a firm's future earnings. In addition to these studies, Friend (1986) points to strong empirical evidence against the signalling of dividend pay-out policy.

6.1. B. Tax Clientele of Dividend

The tax clientele argument views that investors in low tax brackets prefer high dividend paying stocks when compared to investors in high tax brackets (Brennan, 1970; Elton and Gruber, 1970; Long, 1978; Litzenberger and Ramaswamy, 1979; and DeAnglo and Masulis, 1980).

The early investigations of the tax clientele effect were the indirect tests of the tax clientele argument, which was criticised by Miller and Scholes (1982) because of their extreme sensitivity to the definition of dividends. Miller and Scholes (1982), however, view that the early empirical evidence had failed to convincingly support the existence of a tax-induced preference for lower dividends. In addition, the recent studies documented that clientele may not depend on taxes alone (Brennan and Thakor, 1990; Chaplinsky and Seyhun, 1990; Sterk and Vandenbery, 1990; and DeAnglo, 1991).

6.1. C. Agency Cost Explanation of Dividend

Agency cost is the cost that usually arises for the conflict between manager and shareholder. The payment of dividend reduces the agency problem between manager and shareholder by reducing the discretionary funds available to managers (Jensen and Meckling, 1976; Rozeff, 1982; Easterbrook, 1984; Crutchley and Hansen, 1989; Jensen *et al.* 1992; Alli *et al.* 1993; Saxena, 1999; and Mollah *et al.* 2000). However, Jensen (1986) documents that if firms have free cash flows then the firms pay dividends or retire their debts to reduce the agency cost of free cash flow. Moreover, this argument of free cash flow was strongly supported by Rozeff (1982), Jensen *et al.* (1992), Smith and Watts (1992), and Holder *et al.* (1998). In addition, a similar type of conflict exists like shareholder-manager between shareholder and bondholder because shareholders can expropriate wealth from bondholders by paying themselves dividends, therefore, bondholders try to contain this problem through restrictions on dividend payments in the bond indenture (Smith and Warner, 1979; and Kalay, 1982a).

However, La Porta *et al.* (2000) argues that agency cost arises for the lack of protection of the outside investors (shareholders and bondholders) because controlling shareholders or managers (insiders) expropriate funds by maximising their own benefits. Mollah *et al.* (2000) also views the same argument. Expropriation can take a variety of forms. In some instances, the insiders simply steal the profits. In other instances, the insiders sell the output, the assets, or the additional securities in the firm they control to another firm they own at below market prices. Such transfer pricing, asset stripping, and

investor dilution, though often legal, largely has the same effect as theft. In still other instances, expropriation takes the form of diversion of corporate opportunities from the firm, installing possibly unqualified family members in managerial positions or overpaying executives, and undertaking wasteful projects. In general, expropriation is related to the agency problem described by Jensen and Meckling (1976), who focus on the consumption of "perquisites" by managers and other types of empire building. It means that the insiders use the profits of the firm to benefit themselves rather than return the money to the outsider investors. La Porta *et al.* (2000), therefore, suggested that the corporate governance is, to the large extent, a set of mechanism through which outside investors protect themselves against expropriation by the insiders.

6.1. D. Transaction Cost, Residual Theory and Pecking Order Theory of Dividend

Transaction cost is the cost of external financing. The firms with higher levels of financial leverage face a higher levels of fixed charges, which leads those firms to pay lower levels of dividends because of the cost of external financing (Higgins, 1972; and Fama, 1974). On the other hand, Huberman (1990) documents an opposite argument that even in the presence of transaction costs, dividend policy may be irrelevant.

Residual theory of dividend postulates that a firm will pay dividends only when its internally generated funds are not completely used up for investment purpose. However, pecking order theory of Myers and Majluf (1984) views that firms experiencing high growth rates generally have large investment requirements and these firms should be characterised by low pay-out ratio.

The summary of the major empirical studies on determinants of dividend policy along with the data sets they used, the methodologies and the remarkable findings are presented in Table 6.1.

While a great many of the studies conducted on dividend policy but a very few studies conducted on determinants of dividend policy. However, all of the studies prioritised the specific determinants rather than dividend theories except Alli *et al.* (1993).

Table 6.1: A Brief Summary of the Major Studies on Determinants of Dividend Policy:

Author	Data Set	Dependent Variable	Method	Findings Regarding the Dividend Theories
1. Michaelsen, 1961	Randomly selected 101 non-closely related and non-financial domestic US cross-sectional firms over the period of 1949-58	(a) Dividend Yield (b) Dividend Pay-out Ratio	(a) Rank Correlation (b) OLS	Signalling Theory: Support Transaction Cost & Residual Theory: Support
2. Gillespie, 1971	Quarterly data for cross-section of 1726 US firms over the period of 1965-69	Changes in Dividend	Multiple Discriminant Analysis	Signalling Theory: Support (narrowly) Residual Theory: Reject
3. Rozeff, 1982	1000 US cross-sectional non-regulated firms from 64 spans over the period of 1974-80	Dividend Pay-out Ratio	OLS	Agency Cost: Support Transaction Cost & Residual Theory: Support
4. Gerber, 1988	Primary and secondary data from NYSE listed 11 large firms for the period of 1977-86	Target Pay-out Ratio	OLS	Signalling Theory: Support Tax Clientele: Reject Agency Cost: Support Transaction Cost & Residual Theory: Support
5. Partington, 1989	Questionnaire survey on managers of 152 Sydney Stock Exchange listed large firms in 1985	Cash Dividend	(a) Likert Scale (b) Kendall Coefficient © Wilcoxon Test	Signalling Theory: Support Tax Clientele: Reject Transaction Cost & Residual Theory: Reject
6. Jensen *et al.* 1992	Cross-section of 565 US firms in 1982 and 632 US firms in 1987 respectively	Dividend Pay-out Ratio	3 Stage Least Square (3SLS)	Signalling Theory: Support Agency Cost: Support Transaction Cost & Residual Theory: Support
7. Alli *et al.* 1993	Cross-section of 105 US non-financial sector firms over the period of 1983-85	Dividend Pay-out Ratio	2 Stage Multivariate ((a) Factor Analysis and (b) OLS	Signalling Theory: Reject Tax Clientele: Support Agency Cost: Support Transaction Cost & Residual Theory: Support

Table 6.1: A Brief Summary of the Major Studies on Determinants of Dividend Policy: Cont...

Author	Data Set	Dependent Variable	Method	Findings Regarding the Dividend Theories
8. Holder *et al.* 1998	Cross-section of 477 US firms over the period of 1983-90	Mean Standard Deviation of Dividend Pay-out Ratio	OLS	Signalling Theory: Support Agency Cost: Support Transaction Cost & Residual Theory: Support
9. Saxena, 1999	Cross-section of randomly selected 333 NYSE listed regulated and non-regulated firms over the period of 1981-90	Dividend Pay-out Ratio	OLS	Agency Cost: Support Transaction Cost & Residual Theory: Support
10. Mollah *et al.* 2000	Cross-section of 153 Dhaka Stock Exchange listed non-financial sector firms over the period of 1988-97	Dividend Pay-out Ratio	OLS	Agency Cost Theory: Support

Furthermore, we know that the empirical studies of dividend policy always lagged behind the theoretical studies and the results of the empirical studies are controversial. Therefore, we don't see that the researchers made any real attempt to minimise the gap between theoretical and empirical studies. Further, most of the studies were conducted on the US markets and the researchers used a variety of statistical techniques including OLS, factor analysis, and discriminant analysis. While the previous studies are indirect tests on the dividend theories, the empirical results support the dividend theories.

Usually, the researchers estimate a regression equation using the proxies of dividend policy and independent variables. This study attempts to take the dividend theories (signalling, tax clientele, agency cost, transaction cost, residual theory and pecking order theory) into account to identify the determinants of dividend pay-out ratio in an emerging market. This study primarily sheds light on the dividend theories and then focuses on the explanation of each and every dividend theory to identify the influence and impact of dividend theories on dividend policy. Variables are then selected for the empirical analysis by considering the explanation of the theories and also by considering previous empirical evidences on dividend theories. However, the selected variables are considered as the representatives of the dividend theories.

This study attempts to investigate the determinants of dividend policy by testing the alternative dividend theories simultaneously. Four simultaneous regression equations run at the same time for alternative dividend theories (signalling, tax clientele, agency cost, transaction cost, residual theory and pecking order theory) by incorporating the appropriate variables. For analysing alternative theories, the variables of every theory are focused on separately and the variables of other theories are then considered as control variables. However, this analysis will also capture the joint impact of the theories by taking all of the alternative theories into account together.

6.2. Data and Method

6.2. A. Data and Sample

This study considers all the non-financial companies listed on the Dhaka Stock Exchange over the period of 1988-1997 as the sample. The financial sector is excluded from the sample because of their different types of record keeping system.

It is worth mentioning that some of the companies are excluded from the sample because of data problem (unavailability of either company data or market data). As a result, the sample size became smaller than the actual companies listed on the Dhaka Stock Exchange. The final sample consists of 153 companies.

All the company data is collected from the annual reports of the listed non-financial sector companies of the Dhaka Stock Exchange for the period of 1988-1997. A part of the market data (1988-1991) is collected from the Dhaka Stock Exchange price quotations, published records of the Dhaka Stock Exchange, and the Dhaka Stock Exchange computer database. The rest of the market data (1992-1997) is collected from the data channel (Datastream). However, the macro-economic data is collected from the published reports of National Board of Revenue of Bangladesh.

6.2. B. Selection of Variables

6.2. B. I. Dependent Variable

The dependent variable of this study is the dividend pay-out ratio (DPR). Dividend pay-out ratio is the proportion of profit paid as dividend. If firms pay relatively low levels of dividend this may show higher dividend pay-out ratio if the profits are very low. And on the other hand, if a firm maintains the absolute amount of dividend, - that could show increased dividend pay-out ratio, if the firm does this in case of falling profits. Usually, dividend pay-out ratio is defined as dividend divided by net profit after taxes but this could create problems sometimes because many companies pay dividends in excess of net profit after taxes and some companies also pay dividends when net profit after taxes are negative. So, the payment of dividend from negative profit creates a discontinuity in the

variable with negative values being rather meaningless. As dividend pay-out ratio (the extent of profit paid as dividends) is a better proxy for dividend payments than others (e.g., dividend yield or ratio of dividend to sales) are, so, it is considered dividend pay-out ratio as the proxy of the dependent variable. Dividend pay-out ratio is calculated as dividend divided by operating profits where dividend is the annual equity dividend and operating income is the income from operation (gross profit - operating expenses). Jensen *et al.* (1992), Short (1996), and Mollah *et al.* (2000) also used the same proxy for dividend payments in their empirical investigations.

6.2. B. II. Independent Variables

6.2. B. II. A. Dividend Signalling

6.2. B. II. A. i. Business Risk

Dividend signalling theory postulates that dividends convey information about current and future levels of earnings to the market. However, business risk is the uncertainty about current and future profitability. Greater business risk makes the expected direct relationship between current and expected future profitability less certain. Therefore, it is hypothesised that greater business risk will be associated with lower dividend payments. Business Risk is considered as the proxy of uncertainty about current and future earnings for testing dividend signalling theory for this study. Gerber (1988), Jensen *et al.* (1992), and Mollah *et al.* (2000) also used business risk as the proxy of uncertainty of profitability in their empirical studies.

6.2. B. II. B. Tax Clientele of Dividend

6.2. B. II. B. i. Institutional Shareholders

As the tax clientele argument views that investors in low tax brackets prefer high dividend paying stocks when compared to investors in high tax brackets. The tax status of the institutional shareholders is considered as the proxy for marginal tax payers to test the clientele effect of dividend in this study because the institutional shareholders are in low tax brackets in Bangladesh. The tax rate on dividend income is only 15% for the institutional shareholders of the Dhaka Stock Exchange listed companies. If tax clientele argument is valid, the marginal tax payers prefer high yield stocks, therefore, it is

hypothesised a positive relationship between the institutional shareholders and the dividend pay-out ratio. Gerber (1988), Partington (1989), and Alli *et al.* (1993) also used institutional shareholders as the proxy for marginal tax payers in their empirical studies.

6.2. B. II. C. Agency Cost explanation of Dividend

6.2. B. II. C. i. Insider Ownership

Agency theory argues that firms pay higher amount of dividends as monitoring and bonding package when insiders hold a lower percentage of common stock and / or greater number of common stocks held by outsiders to reduce agency cost. If more percentage of common stocks is held by insiders then that leads to less protection of outsiders and in that case management usually expropriate funds by maximising their own benefits rather than return the money (dividend) to the outsiders (La Porta *et al.* 2000), therefore, it is hypothesised a negative relationship between insider ownership and dividend pay-out ratio. The proportion of stock held by insiders is considered as the proxy of insider ownership for this study. Rozeff (1982), Jensen *et al.* (1992), Alli *et al.* (1993), Holder *et al.* (1998), Saxena (1999), and Mollah *et al.* (2000) used percentage of insider ownership as a proxy of insider ownership in their studies.

6.2. B. II. C. ii. Dispersion of Ownership

As agency theory suggests, widely spread ownership has more bargaining power which also ensures more protection of outsiders and in this case corporate governance works well. Therefore, management pays more dividends to control the influence of widespread ownership. As the number of common stockholders increases, the agency problems become more severe, the need for monitoring actions also increases; hence, dividend can alleviate this problem, so it is hypothesised a positive relationship between number of common stockholders and dividend pay-out ratio. The number of common stockholders is considered as the proxy of dispersion ownership for this study. Rozeff (1982), Jensen *et al.* (1992), Alli *et al.* (1993), Holder *et al.* (1998), Saxena (1999), and Mollah *et al.* (2000) also used the same proxy for dispersion of ownership in their studies.

6.2. B. II. C. iii. Free Cash Flow

Jensen's (1986) free cash flow hypothesis suggests that the firms with more free cash flow need to pay more dividends or to retire their bonds to reduce the agency cost because free cash flow encourage the insiders to take negative net present value (NPV) projects. However, La Porta *et al.* (2000) views that even if the investors' protection improves but the firm has free cash flow then the insiders must engage in more distorted and wasteful diversionary practices such as setting up intermediary companies into which they channel profits, and take wasteful projects very often. Moreover, returning the money to the outsiders, i.e., payment of dividend to outside shareholders and retiring the long-term debt reduces the agency cost of free cash flow. As payment of dividends reduces the agency cost of free cash flow, therefore, it is hypothesised a positive relationship between free cash flow and dividend pay-out ratio. Free cash flow is considered as the proxy of free cash flow variable in this study. Holder *et al.* (1998), and Mollah *et al.* (2000) also used the same proxy of free cash flow in their studies.

6.2. B. II. C. iv. Collateralizable Assets

Collaterizable asset is the security of the long-term debt because higher amounts of collaterizable assets indicate the higher extent of security of the bondholders. As higher amount of collaterizable assets is the indication of higher level of protection for bondholders, so, higher amount of collaterizable assets also reduces the agency cost arising for the conflict between shareholder and bondholder. Therefore, it is hypothesised a positive relationship between collateralizable assets and dividend pay-out ratio because a firm with more collateralizable assets has fewer agency problems between shareholder and bondholder and that also leads to the higher level of dividend payments because in that case firms face fewer debt indenture (Titman and Wessels, 1988). Collateralizable assets are considered as the proxy of bondholders' security for this study. Alli *et al.* (1993), and Mollah *et al.* (2000) also considered the same proxy for the bondholders' protection in their studies.

6.2. B. II. D. Transaction Cost, Residual Theory, and Pecking Order Theory of Dividend

6.2. B. II. D. i. Financial Leverage

Higher level of financial leverage indicates the higher level of debt burden of the firm and this also increases the burden of fixed charges, i.e., transaction costs. Debt-equity ratio is considered as the level of debt for this study. As higher burden of transaction cost reduces the capability of paying dividends, therefore, it is hypothesised a negative relationship between the level of debt and dividend pay-out ratio. Gerber (1988), Partington (1989), and Jensen *et al.* (1992) also considered debt-equity ratio as the proxy of debt burden in their empirical investigations.

6.2. B. II. D. ii. Size

We know that bigger firms face less issuance cost for external financing, so, bigger firms have the advantageous positions in the capital market to raise external funds at lower costs. As bigger firms enjoy advantages in the capital market for external financing, so, the dividend paying ability of the bigger size firms increases. And indeed the bigger firms pay more dividends compare to the smaller firms. Therefore, it is hypothesised a positive relationship between firm size and dividend pay-out ratio. Alli *et al.* (1993) and Holder *et al.* (1998) also considered firm size as the proxy for the issuance cost of external financing in their studies.

6.2. B. II. D. iii. Investment Opportunity

The firms experiencing high growth rates generally have large investment requirements and normally the investment opportunities reduces the capability of paying dividends of those firms because financial managers usually take all the positive net present value projects to maximise shareholders wealth. Therefore, it is hypothesised a negative relationship between investment opportunity of the firm and dividend pay-out ratio because as residual theory and pecking order theory concern, firms with large investment opportunities generally use internally generated funds for investment and consequently pays lower dividends. Growth of net assets is the better predictor for investment opportunities than others (e.g., sales growth) because growth of net assets

provides the evidence whether the firm has taken positive net present value projects. And if they do then the firm is supposed to grow up in real terms. Therefore, growth of net assets is considered as the proxy of investment opportunities for this study. Partington (1989), Jensen *et al.* (1992), and Alli *et al.* (1993) also used the similar proxy for investment opportunities in their studies.

The independent variables, their proxies, and the calculations are shown in Table 6.2.

Table 6.2: A Brief Description of the Independent Variables

Dividend Theories	Name of the Variables	Proxies	Calculations
Signalling	Business Risk	Uncertainty of Current and Future Profitability	Standard Deviation of 1st Difference of Operating Income Divided by Total Assets
Tax Clientele	Tax Status of institutional Shareholders	Institutional Shareholders	Proportion of Stock held by Institutional Shareholders
Agency Cost	(1) Insider Ownership (2) Dispersion of Ownership (3) Free Cash Flow (4) Collateralizable Assets	(1) Stock held by Insiders (2) Number of Common Stockholders (3) Free Cash Flow (4) Collateralizable Assets	(1) Proportion of Stock held by Insiders (2) Natural Log of Number of Common Stockholders (3) (Net Profit After Tax – Dividend + Depreciation) / Total Assets (4) Ratio of Net Fixed Assets to Total Assets
Transaction Cost, Residual, and Pecking Order Theory	(1) Financial Leverage (2) Size (3) Investment Opportunity	(1) Financial Leverage (2) Size (3) Growth in Net Assets	(1) Ratio of Long Term Debt to Book Value of Total Assets (2) Natural Log of Market Capitalisation (3) (Net Fixed $Assets_t$ - Net Fixed $Assets_{t-1}$) / Net Fixed $Assets_{t-1}$

6.2. C. Methodology

6.2. C. I. Hypothesis:

Ho: *There is no significant influence of Business Risk, Institutional Shareholders, Insider Ownership, Dispersion of Ownership, Free Cash Flow, Collateralizable Assets, Financial Leverage, Size, and Investment Opportunity on dividend pay-out ratio.*

6.2. C. II. Proposed Model

Both pooled and cross-sectional OLS models run over the period of 1988-97 to identify the determinants of dividend pay-out ratio.

OLS Regression Model:

$$Dividend\ Pay\text{-}out\ Ratio\ (DPR) = \alpha + \beta_1 Business\ Risk\ (BR) + \beta_2 Institutional\ Shareholders\ (INST) + \beta_3\ Insider\ Ownership\ (INSIDE) + \beta_4 Dispersion\ of\ Ownership\ (DOWNER) + \beta_5 Free\ Cash\ Flow\ (FCF) + \beta_6 Collateralizable\ Assets\ (COLLASS) + \beta_7 Leverage\ (LEVER) + \beta_8 Size\ (SIZE) + \beta_9 Investment\ Opportunity\ (INVEST) + \varepsilon$$

6.3. Empirical Evidences

The average dividend pay-out ratio in the Dhaka Stock Exchange over the period of 1988-97 is 24.93%. While the dividend pay-out ratio is low but it is quite acceptable for the Dhaka Stock Exchange as an emerging market where the developed markets pay almost the same amount of dividends. However, this type of dividend payment presumably has higher level of investment opportunities but the asset growth rate is only 11.78%, so, there is lot of scope of suspicion about profit transfer and profit channelling. Besides, it is presumable that the market has lower levels of outsiders' protection. Furthermore, if we look at the ownership structure of the Dhaka Stock Exchange listed companies then we could get some idea about the outsider protection in the Dhaka Stock Exchange. Usually, the institutional shareholders are the major shareholders of the firms but we see that institutional shareholders are holding only 10.99% of the shares in the Dhaka Stock Exchange which is one quarter of the developed markets (e.g., US markets). In contrast, the insiders are holding 29.92% of the shares. So, these are the clear indication of the facts. The institutional shareholdings figure indicate that the tax clientele theory is presumably not working well in the Dhaka Stock Exchange. However, the higher level of insider ownership indicates the closely held nature of the firms and suggests less protection of outsiders in the markets. So, it is also presumable that expropriation is working perfectly and efficiently in the market. Moreover, the insider ownership is three

times as high as the developed markets (e.g., US markets); therefore, this is the indication of higher level of influence of agency cost theory in the market (Table 6.3).

The Pearson's correlation matrix shows the expected relationship of all the independent variables with dividend pay-out ratio except dividend signalling variable. However, the correlation matrix also shows the correlation between the independent variables are either low degree or moderate degree, which suggests the absence of multicolinearity between independent variables. As suggested by Bryman and Cramer (1997), the Pearson's *r* between each pair of independent variables should not exceed 0.80; otherwise independent variables with a coefficient in excess of 0.80 may be suspected of exhibiting *multicolinearity.* Multicolinearity is usually regarded, as a problem because it means those regression coefficients may be unstable (Bryman and Cramer, 1997). Several scholars including Mendenhall and Sincich (1989), Hair *et al.* (1995), and Freund and Wilson (1998), state that multicolinearity can be quite difficult to detect where there are more than two independent variables. Moreover, the colinearity diagnostics provided by SPSS including colinearity statistics (Tolerance and Variance Inflated Factor *'VIF'*), condition index, and variance proportion support the Pearson's correlation coefficients and document no proof of multicolinearity problem in the regression models (Table 6.4).

There are two types of Ordinary Least Square (OLS) regression models run to identify the determinants of dividend policy in an emerging market: one, ten yearly average cross-section regression model, and two, pooled regression model. In the pooled regression model, nine (10-1) year dummies are considered for 10 years (1988-97). However, the coefficient of none of the years is significant, which indicates no impact of time on the model. As time does not have any impact on the model, so, incorporation of year dummy has rather worsen the overall significance of the regression model.

The overall $\boldsymbol{F}_{\text{score}}$ = 8.466 and 5.125 for cross-sectional and pooled regression models respectively and both the values are significant at 1% level ($p<.000$). However, the

Table 6.3: Descriptive Statistics of the Variables

Variables	Mean	Standard Deviation	Minimum	Maximum
DPR	.2493	.3212	.00	2.60
BR	1.2201	.2541	.9014	1.8233
INST	.1099	.1848	.00	.95
INSIDE	.2992	.2451	.00	.95
DOWNER	13.4083	1.5974	9.62	17.61
FCF	3.6E-02	6.5E-02	-.27	.33
COLLASS	.3907	.2314	.01	2.10
LEVER	.2707	.2579	.00	2.25
SIZE	4.2806	2.1950	-2.93	9.37
INVEST	.1178	.8475	-5.81	4.09

Table 6.4: Correlation Matrix: Pearson Indices

Variables	DPR	BR	INST	INSIDE	DOWNER	FCF	COLLASS	LEVER	SIZE	INVEST
DPR	1.000									
BR	.050	1.000								
INST	.052	-.016	1.000							
INSIDE	-.118***	-.147***	-.165***	1.000						
DOWNER	.103***	-.056*	.245***	-.101**	1.000					
FCF	.100***	.010	-.072	-.063	.049	1.000				
COLLASS	.063**	-.055*	-.104**	.148***	-.006	.145***	1.000			
LEVER	-.154***	-.067**	-.067	.159***	-.116***	-.209***	.072**	1.000		
SIZE	.199***	.047	.029	-.117***	.559***	.210***	.032	-.150***	1.000	
INVEST	-.013	.032	.074	.037	.020	-.009	-.065*	-.029	.058	1.000

Note: ***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

adjusted R^2 is 0.155 and 0.152 respectively for cross-sectional and pooled regression models.

Ramsey's RESET test (Ramsey, 1969) and White test (White, 1980) are employed for checking heteroskedasticity problem of the models but both the tests are unable to reject the hypothesis of homoskedasticity, i.e., the residuals are homoskedastic. However, Durbin-Watson is close to 2 in both the regression models, which indicates no autocorrelation problem of the regression models.

While the coefficients of tax clientele, agency cost, transaction cost, residual, and pecking order theory variables are in the predicted direction in both the regression models but the coefficients are not strongly significant except a very few. In contrast, the signalling variable provides different story. The signalling variable shows a significant (p = .025) positive relationship with dividend pay-out ratio in cross-sectional model but an insignificant (p = .969) negative relationship with dividend pay-out ratio in pooled regression model.

6.3. A. Dividend Signalling

The standardised beta coefficients of business risk are .110 and -.003 respectively in cross-sectional and pooled regression models but only the beta coefficient of cross-sectional model is significant (p = .025). These results document a positive relationship between dividend pay-out ratio and business risk. These results suggest that in spite of more uncertainty about future profitability, the firms are paying more dividends in the Dhaka Stock Exchange. However, these results indicate that dividends neither signal about future profitability nor convey right information to the market because if dividends do convey information to the market then dividend should behave in the rational way, i.e., more uncertainty is supposed to lead to fewer dividend payments and vice versa. These results indicate that managers do not convey right information to the market. Usually, the companies listed in the Dhaka Stock Exchange follow stable dividend policy; so, they have a little scope to adjust the profitability to the payments of dividend. Therefore, dividend contains less information and dividend becomes less informative to signal the

profitability (see Chapter 8 for detail). These results reject the information content hypothesis of Miller and Modigliani (1961) and strongly disagree with the previous empirical evidence of dividend signalling.

6.3. B. Tax Clientele of Dividend

The standardised beta coefficients of the institutional shareholdings variable are .077 and .068 and the significant levels are .140 and .181 respectively for cross-sectional and pooled regression models. These results indicate a positive but not highly significant relationship between dividend pay-out ratio and institutional shareholders. As the empirical results document a positive relationship between institutional shareholders and dividend pay-out ratio, so, it is assumed that the marginal tax payers influence the companies to pay more dividends. But in fact, the empirical results do not indicate the significant influence of the institutional shareholders on the dividend pay-out ratio. The main reason behind this problem is that the institutional shareholders are not the major shareholders but they are holding only 10.99% shares of the Dhaka Stock Exchange listed companies. However, these results are consistent with Brennan (1970), Elton and Gruber (1970), Long (1978), Litzenberger and Ramaswamy (1979), and DeAnglo and Masulis (1980) supported tax clientele argument. As we have been mentioned earlier that institutional shareholders are not the major shareholders of the listed companies in the Dhaka Stock Exchange, that is why, even though the empirical results support tax clientele theory but this theory is not supposed to work perfectly in the Dhaka Stock Exchange and therefore, institutional shareholders has become comparatively weak predictor of the tax clientele theory.

6.3. C. Agency Cost Explanation of Dividend

The standardised beta coefficients of insider ownership are -.113 and -.082 and the significant levels are .024 and .125 respectively for cross-sectional and pooled regression models. However, the standardised beta coefficients of the natural log of common stockholders are .034 and .041 and the significant levels are .573 and .505 respectively for cross-sectional and pooled regression models. These results indicate that firms pay higher amount of dividends as monitoring and bonding package when insiders hold a lower

percentage of common stock and / or greater number of common stocks held by outsiders to reduce agency cost. These results, however, support the empirical findings of Jensen and Meckling (1976), Rozeff (1982), Easterbrook (1984), Crutchley and Hansen (1989), Jensen *et al.* (1992), Alli *et al.* (1993), Saxena (1999), and Mollah *et al.* (2000).

The standardised beta coefficients of free cash flow are .024 and .015 and the significant levels are .643 and .284 respectively for the cross-sectional and the pooled regression models. These results, however, support Jensen's (1986) free cash flow hypothesis that if firms have free cash flow then the firms either pay dividends or retire their debts to reduce the agency cost of free cash flow. These results also support the empirical evidence of Holder *et al.* (1998), and Mollah *et al.* (2000).

In addition, the standardised coefficients of collateralizable assets are .086 and .104 and the significant levels are .101 and .052 respectively for the cross-sectional and pooled regression models. These results view that the firms with more collateralizable assets have fewer conflicts between shareholders-bondholders and consequently pay more dividends. Moreover, these results support the empirical evidences of Titman and Wessels (1988), Alli *et al.* (1993), and Mollah *et al.* (2000).

While the higher level of collateralizable assets and the regression coefficients of collateralizable assets indicate the better protection of the bondholders in the Dhaka Stock Exchange, the insider ownership and the dispersion ownership and their regression coefficients provide clear evidence that the outside shareholders are completely unprotected in the Dhaka Stock Exchange. However, employment of unqualified family members in the top management and overpaid positions is a common practice in the Dhaka Stock Exchange. In addition, there are eight leading groups of companies of Bangladesh which exist in the Dhaka Stock Exchange and each of them has 8-10 companies listed in the Dhaka Stock Exchange. However, they (the group of companies) have a great influence on the Dhaka Stock Exchange, so, all of these are the indications of higher level of agency cost and more obviously very low level of outsider protection in the market. Besides, as a number of listed companies are the members of the leading group of

companies with higher levels of insider ownership and lower levels of law enforcement in the market presumes that the insiders are enjoying every facility for stealing profits. transferring pricing, and channelling profits in the emerging markets (Mollah *et al.* 2000).

6.3. D. Transaction Cost, Residual Theory, and Pecking Order Theory of Dividend

The standardised beta coefficients of debt equity ratio are -.274 and -.278 respectively for cross-sectional and pooled regression models and both the coefficients are highly significant ($p<.000$). These results support the hypothesis that highly levered firms bear the huge burden of transaction cost and consequently pay lower amount of dividends to avoid the costs of external financing. However, these results are consistent with the empirical evidences of Higgins (1972) and Fama (1974).

However, the standardised beta coefficients of natural log of market capitalisation are .133 and .146 and the significance levels are .032 and .022 respectively for cross-sectional and pooled regression models. These results document the hypothesis that larger firms face lower issuance cost and they are able to pay more dividends. These results, however, support the empirical work of Alli *et al.* (1993).

Moreover, the standardised beta coefficients of investment opportunity are -.058 and -.045 and the significance levels are .251 and .373 respectively for cross-sectional and pooled regression models. These results indicate that higher growth generally has large investment opportunity and firms use internally generated funds for investment and consequently pay lower dividends. These results are consistent with the previous empirical works. These results, however, support the residual theory of dividend and Myers and Majluf's (1984) pecking order theory of dividend. Even though the empirical results agree with the argument of residual and pecking order theory and support previous studies but as the coefficients are not highly significant, so, the investment opportunity variable has become a very weak predictor of residual and pecking order theory.

So, these empirical results indicate a strong influence of transaction cost in the market, i.e., firms have higher level of debt, which force them to pay less dividends.

However, a higher level of debt burden (27.07%) indicates that the firms either have higher amounts of investment demand or pay higher amounts of monitoring package but the reality is quite different. As we have already been mentioned earlier in this chapter that firms have only 11.78% growth opportunities and firms pay only 24.93% dividend, these figures give us the clear support as we suspected earlier that *may be* the insiders are stealing profits efficiently in the Dhaka Stock Exchange.

Finally, the empirical results document clear evidence that there is a strong influence of agency cost and transaction cost on dividend policy of the Dhaka Stock Exchange listed companies. However, the results also document a very strong disagreement with the signalling effect of dividend in the market. Moreover, the results also evidence the tax clientele effect on dividend policy but these results are not significant at a very high level which means the tax clientele effect is not so strong in the Dhaka Stock Exchange. In addition, the empirical results also document a very weak support of residual and pecking order theory in the Dhaka Stock Exchange (Table 6.5).

6.4. Conclusion

A vast majority of the studies conducted to date focused on dividend policy but some important issues still remaining unresolved. However, there is no such recognised study conducted on the determinants of dividend pay-out policy of the companies listed on the Dhaka Stock Exchange yet. The major objective of this study is to identify the determinants of dividend pay-out ratio in an emerging market. Since Miller and Modigliani (1961) established the irrelevance of dividends in perfect capital markets, several theories have appeared in the literature that explain the payment of dividends and variations in dividend pay-out policy by focusing on market imperfections and all of those studies are concentrated on signalling information content of dividend, tax clientele of dividend, agency cost explanation of dividend, transaction cost, residual theory, and pecking order theory of dividend. These theories are tested by using the OLS models on the Dhaka Stock Exchange data over the period of 1988-1997 to identify the determinants of dividend pay-out ratio for this study. The Pearson's correlation matrix shows the expected relationship of all the independent variables with dividend pay-out ratio except

Table 6.5: Model Summary[a, b]

Refined Constructs	Cross-sectional Regression Model					Pooled Regression Model				
	Unstandar-dised Coeff-icients	Standardised Coefficients	Standard Error	T Value	T Significance	Unstandar-dised Coeff-icients	Standardised Coefficients	Standard Error	T Value	T Significance
Constant	-1.9E-02		.168	-.115	.908	.103		.196	.524	.601
BR	.138	.110	.062	2.249	.025	-4.0E-03	-.003	.102	-.039	.969
INST	.119	.068	.088	1.341	.181	.133	.077	.090	1.480	.140
INSIDE	-.148	-.113	.065	-2.273	.024	-.107	-.082	.070	-1.539	.125
DOWNER	6.9E-03	.034	.012	.565	.573	8.2E-03	.041	.012	.667	.505
FCF	.117	.024	.252	.463	.643	7.2E-02	.015	.254	.284	.776
COLLASS	.119	.086	.072	1.645	.101	.145	.104	.074	1.952	.052
LEVER	-.341	-.274	.065	-5.264	.000	-.346	-.278	.065	-5.305	.000
SIZE	1.9E-02	.133	.009	2.157	.032	2.1E-02	.146	.009	2.309	.022
INVEST	-2.2E-02	-.058	.019	-1.150	.251	-1.7E-02	-.045	.019	-.892	.373
F – ratio value		***8.466******				***F – ratio value***		***5.125*****		
R^2		***.175***				R^2		***.189***		
Adjusted R^2		***.155***				***Adjusted R^2***		***.152***		
N		***153***				***N***		***1076***		

Note: a. Dependent Variable: Dividend Pay-out Ratio (DPR)
b. All Requested Variables Entered
***p<.000

dividend signalling variable. However, the regression coefficients of all the variables are in the predicted direction except business risk, which also support the correlation results.

The coefficients of business risk are positively related to dividend pay-out ratio, which indicates that dividends do not convey any information to the market. Usually, the companies listed in the Dhaka Stock Exchange follow a stable dividend policy; therefore, they do not partially adjust the profitability to the payments of dividend. Therefore, dividend contains less information and dividend becomes less informative to signal the profitability. This result is completely contradictory with the dividend signalling hypothesis because more uncertainty about current and future profitability leads the firms not to pay more dividends but to pay fewer dividends. These results are also inconsistent with the previous empirical studies and reject the theory of dividend signalling.

The coefficients of the ratio of stock held by institutional shareholders are positively related to dividend pay-out ratio, which indicate that the marginal tax payers influence the firms to pay more dividends. This findings support the tax clientele argument of dividend but the coefficients are not strongly significant, so, institutional shareholdings has become a very weak predictor of tax clientele theory because the marginal tax payers (the institutional shareholders) are not the major shareholders of the companies listed in the Dhaka Stock Exchange.

The coefficients of insider ownership are negative and the number of common stockholders are positively related to dividend pay-out ratio, which indicate that firms pay higher amount of dividends as monitoring and bonding packages when insiders hold a lower percentage of common stock and / or greater number of common stocks held by outsiders to reduce agency cost. However, free cash flow coefficients are positively related to dividend pay-out ratio, which indicate that if firms have free cash flow then they either pay dividends or retire their debts to reduce the agency cost of free cash flow. In addition, the coefficients of collateralizable assets are positively related to dividend pay-out ratio, which indicate the influence of agency cost arises for the conflict between shareholder-bondholder on dividend pay-out ratio. These results are consistent with the

previous empirical studies and support the influence of agency cost on dividend pay-out ratio.

While the empirical results evidence the better protection of the bondholders in the Dhaka Stock Exchange, the higher amount of insider ownership, small size and less dispersed (ownership) firms are the clear indication of extreme influence of insiders in the Dhaka Stock exchange listed companies. However, the results also evidence that the outside shareholders are completely unprotected in the Dhaka Stock Exchange. Furthermore, in practice the insiders are all the wrong-doers in the Dhaka Stock Exchange and the group of companies are the major source of these activities. So, all of these evidence the higher level of influence of agency cost theory in the market and more obviously the very low level of outsider protection. Besides, a lower level of law enforcement is helping the agents (managers) to do whatever they like, i.e., stealing profits, transferring pricing, channelling profits, etc.

The coefficients of debt-equity ratio negatively and firm size positively related to dividend pay-out ratio, which indicates that firms with higher level of leverage pay lower amount of dividend because of higher burden of transaction cost and large firms pay higher dividend because these firms face lower issuance cost. These results are consistent with previous empirical studies and support a significant influence of transaction costs on dividend pay-out ratio.

The coefficients of investment opportunity variable are negatively related to dividend pay-out ratio, which indicates that the firms with higher growth generally pay lower dividends. These results are consistent with the previous empirical works. However, these results support residual theory of dividend and Myers and Majluf's (1984) pecking order theory of dividend.

The average growth rate of the listed companies is 11.78% but the free cash flow is only 3.6%. This is very minimum to fulfil the fund requirement for the investment demand. However, as the insiders are the major shareholders of the Dhaka Stock

Exchange listed companies and presumably the insiders are misusing the company profits perfectly and efficiently, which also causes higher amount of external financing (debt-equity ration is 27.07%). Moreover, as we know that most of the companies listed on the Dhaka Stock Exchange are small in size, so, the companies face more issuance cost for external financing and higher amount of debt burden increases the total transaction cost. Therefore, a higher amount of transaction costs and higher amount of insider ownership reduce the capacity of the listed companies to pay dividends.

The empirical results document clear evidence that there is a strong influence of agency cost and transaction cost theories on dividend policy of the Dhaka Stock Exchange listed companies. The coefficient of the signalling theory variable is positively significant (at 5% level), which is completely opposite to the hypothetical relationship. This result clearly disagree with the existing literature and empirical evidence. So, it is quite reasonable to conclude that the empirical evidence disagrees with signalling effect of dividend in the Dhaka Stock Exchange (see Table 6.5). However, the results also evidence the tax clientele effect on dividend policy but these results are not significant at very high level which means the tax clientele effect is not so strong as other theories in the Dhaka Stock Exchange. In addition, the empirical results also document weak support for residual and pecking order theory in the Dhaka Stock Exchange. Finally, the empirical study identified leverage, firm size, insider ownership, and collateralizable assets as the major determinants of dividend policy in an emerging market.

Chapter Seven: Dividend Policy and Dividend Behaviour: Prior Empirical Evidence

7.0. Introduction:

This chapter of the thesis will incorporate the review of the major previous empirical studies on dividend policy and behaviour. The objectives of this chapter are threefold: *one*, to have a better understanding about dividend policy and behavior, *two*, to identify the dividend policy and behavior of financial markets, and *three*, to develop the research questions for the empirical investigation on dividend policy and behavior in an emerging market.

The rest of this chapter is divided into two sections. The review of major empirical studies on dividend policy and behaviour along with critical evaluation is included in section 7.1. Section 7.2 contains a brief summary and concluding remarks.

7.1. Review of Major Empirical Studies:

7.1.1. Dobrovolsky (1951): Corporate Income Retention:

Dobrovolsky (1951) was the earliest to conduct a full scale empirical study on dividend behaviour, although his main concern was corporate retention rather than dividends. He studied the behaviour of manufacturing concerns over different business cycles to establish the main elements which determined the level of earnings retention. He observed that retention and dividends are the normal proportion of the earnings. When the normal retention is not sufficient enough for the higher rate of expansion of assets then the corportion usually depends on external fund and on the other hand, when asset expansion is unusually low then retention is used to retire the borrowings of the company. Dobrovolsky summarises his findings as:

> *"In the language of economic theory, it can be said that the average corporate propensity to save has varied with the level of net income, but that the marginal corporate propensity to save has remained the same at different levels of net income." (p. 2).*

In one theory of consumer behaviour, the current saving of consumers is related to their current income in a manner similar to that, which Dobrovolsky (1951) ascribes to corporate earnings retention. In this theory consumer preferences for savings and consumption are stable over time and determined mainly by the level of current income (Atkinson 1956). Current savings increases more than proportionally as the level of current income increases (Milton Friedman 1957).

The critics (Michaelsen, 1961) of Dobrovolsky's work mentioned his findings are quite unconvincing as an explanation of corporate dividend behaviour. The determinants of consumer saving are not relevant to the analysis of corporate dividend behaviour because corporations do not save; rather they invest. Corporate retention and dividend behaviour is more properly related to a theory of investment of the firm. Thus, investors own the wealth which firms manage in the interest of their owners. The firm serves this interest by maximising the present value of the income which this wealth is expected to yield. Investors may save or consume this income as it is realised either as cash dividends or by realising a portion of the appreciation in the price of the stock which results from retention. The firm neither saves nor consumes its current earnings. It may invest a portion of these when doing so does not lessen the opportunities of its owners to save or consume. Such investment is, at the same time, saving on behalf of the investors and is so recognized by them. Dobrovolsky (1958) and Kaldor (1957) do not consider corporate investment of retentions as savings on behalf of investors. They believe that a complete distribution of all corporate earnings would result in a quite different level of saving in the economy from the current one because they believe that investors save much less than corporations do.

As appropriate investment of extentions is made stock price should increase by a corresponding amount. Abstracting from taxes and transaction costs, investors include this price appreciation in their current income together with cash receipts. They may save or consume whatever proportion of this total income they wish by selling, if necessary, an

appropriate portion of their portfolio. Thus the investment of a particular firm can be quite independent of the saving of a particular investor. Investors' propensity to save as consumers may affect the level of investment in the economy as a whole indirectly through its effects on the level of interest rates, but this relationship will not affect the independence of investment of individual firms and the savings of particular investors.

Michaelsen (1961) found Dobrovolsky's notion of corporate propensity to save both methodologically and theoretically difficult. Dobrovolsky derived a corporate propensity to save schedule from the aggregate time-series data that he used to describe both the behaviour of the manufacturing sector of the economy and the behaviour of the individual firms composing that sector. Proper inference from aggregate to individual dividend and retention behaviour requires (a) that all important variables affecting the dividend behaviour of individual firms be included in the aggregate analysis; (b) that the regression equation used closely approximates the actual relationship between these variables; and (c) that the relationship between these variables within individual firms not be distorted or concealed by the process of aggregation. If the first two of these conditions are not clearly established, then regression coefficients such as Dobrovolsky obtained have no particular meaning, except as historical description of the manufacturing sector.

Michaelsen (1961) also found Dobrovolsky's work inappropriate on theoretical grounds. He mentioned:

" .....this study shows clearly that there are important differences in pay-out ratios and in the variability of cash dividend flows among firms and that these differences are related to variables, other than current earnings variables, which were hidden by the use of aggregate data."

".....with aggregate data no investigation of the possible causes of these differences can be undertaken."

Dobrovolsky did not determine whether the corporate propensity to save schedule concealed such interfirm differences, but rather assumed implicitly that aggregation presented no special problems.

7.1.2. Lintner (1956): Distribution of Income:

In a pioneering study in 1956, professor John Lintner investigated dividend behaviour over a extended period of time. He studied two distinct aspect of dividend. In the first aspect Lintner interviewed the managements of twenty eight firms to determine the factors they considered important in setting the firm's dividend payments. The major findings of that study were: (a) management sought to avoid increases in dividend payments, on a per share basis, that might have to be reversed at a subsequent time, and (b) earnings are the major determinants of dividend policy. In presenting these results Lintner leaves the reader with the following caveat:

> *".....the companies were not selected as a sample from which to draw statistical conclusions; rather they were deliberately selected to encompass a wide variety of situations and to build in opportunities for significant suggestive contrasts between the policies of companies similar in several respects but differing in other important characteristics." (p. 98).*

In the second aspect Lintner developed an econometric model to explain dividend action. The equation was fitted to aggregate economic data taken from the national income accounts for the period 1918 to 1941 and was tested on similar data from the period 1918 to 1951. Lintner also tested the model on each of the twenty eight companies which were polled in the earlier part of the study. While the model was aggregative it nevertheless proved quite accurate in explaining the dividend action of the twenty eight companies from Lintner's sample universe.

Lintner's work suggests that most dividend decisions can be explained by the following equation:

$$D_{it} = a_i + c_i (D^*_{it} - D_{i\,(t-1)}) + \mu_{it} \quad \ldots\ldots\ldots\ldots \quad (7.1)$$

Where,

$D^*_{it} = r_i P_{it}$,

r_i = Target pay-out ratio,

P_{it} = Current year's profit after taxes,

D_{it} = Change in dividend payments,

a_i = Contant term (usually positive),

c_i = Speed of adjustment coefficient, and

μ_{it} = Error term.

Subscript 'i' = individual company, and

Subscript 't' = time.

This model states that the change in current year's dividend is equal to a constant plus an adjustment factor times (the current year's indicated earnings payable if a strict pay-out ratio is adhered to, minus lagged dividends), plus an error term which represents the discrepancy between the observed change ΔD_{it} and the change expected on the basis of the other terms in the equation.

Equation (7.1) can be converted to the following equation where b = cr and d = (1-c) without changing the error term:

$$D_{it} = a_{it} + bP_{it} + dD_{i(t-1)} + \mu_{it} \quad \ldots\ldots\ldots\ldots \quad (7.2)$$

Lintner fitted national income data for the period of 1918-1951 to equation (7.2) and found *".....excellent correlations, random residuals, and highly significant regression coefficients...." (p. 109).*

Lintner belived this finding to be consistent with the following statement:

> *" Current dividend distributions are primarily determined by last year's dividends and current profits. The net effect of other factors, insofar as not systematically reflected by current profits and lagged dividends, is small and random." (Lintner 1963, p. 252).*

However, external funds did not have, in Lintner's work, even the minor supplementary role they had in Dobrovolsky's. And Lintner's work is theoretically more satisfactory than Dobrovolsky's work because that was based explicitly on a mechanism of corporate behaviour.

Despite the major contributions of Lintner's research, the study fails to fully inform the reader of all the factors which were investigated or to divulge the relative importance of the factors in the determination of dividend policy. However, critics of Lintner's work have pointed out that ability of the model to explain dividends over a very long time during which everything else in the economy changed is grounds for suspicion of the results rather than satisfaction (Brittain, 1964). Specifically, the major weakness is attributed to reliance on aggregate data taken from national income accounts relating dividends directly to profits after tax. This may be appropriate for selected time periods to which the model is applied; however, since the beginning of the World War II, liberalised amortisation provisions have largely obsured the meaning of tax return data. For example, since the World War II, the dividend net profit ratio has doubled while the ratio of dividends to cash flow has remained remarkably stable at about 30% (Brittain, 1964).

Even if Lintner's findings are accurate for the time period he covered, the model and his empirical results may be incorrect when considered in a contemporary context. Since the study appeared in 1956 there have been profound changes in the financial management of large American corporations. The normative theory which was in its infancy in the early 1950's has become an integral part of business school and advanced management cirricula. In addition, the increased acceptance of debt as an appropriate source of funds, and the growth in the ability of corporations to raise large sums of money in the capital markets has probably had a significant impact on management's willingness to shift financing requirements from internal to external sources with an attendant increase in dividend flexibility (Gillespie, 1971).

Lintenr's interpretation of his findings depends critically on this assumption and it therefore deserve comment (Michaelsen, 1961). If external funds have no important role in financial decisions, as Lintner implied by his omission of them from his hypothesis, then investment must be financed almost entirely through retentions. If the firm maintains, on an average, a stable dividend pay-out ratio, these retention and hence, the investment which they finance, will be a stable proportion of current earnings. If, in addition, the average rate of return on new investment is the same as that on existing investment, and if both of these rates of return are stable over time, the annual increment in earnings due to retention will also be a stable proportion of current earnings. Therefore, the earnings stream will grow at a constant rate. Reinvestment of a constant proportion of this stream requires an increasing amount of investment opportunities. The capital budget, the optimum package of investment opportunities financed by these retentions, will also grow at the same constant rate as the earnings stream and will therefore be a constant proportion of current earnings in every period.

Lintner's model of dividend determination, in which the target pay-out ratio is the main parameter, is thus unsatisfactory on both theoretical and empirical grounds. His work also entailed methodological difficulties (Michaelsen, 1961). Like Dobrovolsky, Lintner used aggregate time-series data as the main object of his analysis. Lintner made no

rigorous attempt to show that earnings and dividends for the corporate sector as a whole might be treated as observation of a single firm and that such observations for several consecutive years might be treated as independent observations for similar firms. Rather, Lintner implicitly assumed that the regression coefficients derived from these aggregate data described the determination of dividends within individual firms. However, here, as in Dobrovolsky's work, important interfirm differences were concealed by aggregation and the coefficients so obtained serve mainly as historical descriptions of the corporate sector of the economy.

7.1.3. Paul Darling (1957): Extension of Lintner's Work:

Paul Darling proposes *'a theory to explain how dividend decisions are made'* (Darling 1957, p. 214). He argued that a target pay-out ratio and speed-of-adjustment factor could not give proper weight to all the factors which might be expected to affect dividend decision. He proposed more elaborate hypothesis to explain dividend behaviour but did not alter Lintner's primary emphasis on pay-out ratio as the central element in dividend policy. He desired to reveal the influence of other factors besides last year's dividends and this year's profits on the pay-out ratio.

In the study which followed Lintner's effort Paul Darling modified Lintner's basic formulation to include expectations and liquidity in the determination of dividend policy. Darling bases his work on the presumption that the ultimate goal of the management group is to maintain and if possible enlarge its control over corporate affairs. He further theorises that this goal depends on (a) growth of the firm relative to the rest of the industry, (b) the degree of liquidity maintained by the firm, and (c) the extent of dispersion of stock ownership. Darling in essence proposed a more complete explanation of dividend behaviour without changing Lintner's principal emphasis.

Darling mainly focused on managerial expectations and attitude towards liquidity; but he hoped to gain an understanding of these *"by studying fluctuations in the dividend flow." (Darling 1957, p. 209).*

Darling hypothesise that dividends are a function of current investment and current use of external funds as well as past dividends and current earnings. The functional relationship may be expressed in the form of Lintner's model as follows:

$$\Delta D = a + c(rP - D_{-1}) - dI + eB + \mu \quad \ldots\ldots\ldots\ldots\ldots (7.3)$$

Where, ΔD, a, c, r, P, D_{-1}, and μ are same as in equation (7.1) and I is current net investment and B is current net flow of external funds.

In Lintner's formulation ΔD is not affected by investment and external funds but only by current profits and past dividends. On the other hand, in Darling's work ΔD is affected by current profits and past dividends and as well as current investment and current use of external funds. The variables in equation (7.3) bear the following relationship to each other by accounting identity:

$$\Delta D = P - D_{-1} + (B - I) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (7.4)$$

The relationship between earnings, investment and external funds are implied by the assumption of the proportionality of the capital budget is:

$(B - I) = kP$, where $k = 1 - r$ and $1 > k > 0$.

That is, both investment and external funds bear a constant proportional relationship to earnings determined by the pay-out ratio.

Darling's first step in the revision of Lintner's work is the introduction of a budget constraint which takes the following form:

$$(P + A + B) - (D + I + \Delta W) = \Delta C \quad \text{..... (7.5)}$$

Where,

P = Net income after taxes,

A = Depreciation,

B = Net current borrowing,

D = Dividends,

I = Gross investment,

ΔW = Change in working capital requirements, and

ΔC = Change in holdings of precautionary assets.

Management's goal of maintaining financial maneuverability involves planning for an adequate level of future liquid balances thus placing the dividend decision within the constraint of this budget equation. In addition, if the firm's liquidity position is defined by the sequence of estimated future values c_1, c_2, c_3, ... etc. departure from these levels can be determined by management. A liquidity index, L, to be used in the dividend equation is then defined as an index of the degree of departure of the currently expected future cash position from desired levels.

Incorporating these modifications into Lintner's basic formulation produces the following equation can be tested using aggregate data and multiple regression analysis:

$$D = a_1 + a_2P + a_3P_{-1} + a_4A + a_5\Delta S + a_6L + \mu \quad \text{..... (7.6)}$$

Where,

D = Dividends,

P = Profits,

A = Amortisation,

ΔS = Change in sales,

L = Index of liquidity, and

μ = Error term.

Darling incorporated lagged profits in equation (7.6) instead of lagged dividends because of his feeling that profit is a better explanatory variable than dividends. In addition, he suggests that because of the high degree of multicolinearity between lagged dividends (D_{-1}) and lagged profits (P_{-1}) Lintner's correlation findings may actually reflect the importance of profits, not dividends.

In developing his tests for determining the impact of liquidity and expectations Darling theorises that after management has decided upon a future cash position, c_1, c_2, c_3, ... a revision of expectations about future profits or changes in the degree of certainty of future profits will cause a divergence between the desired and expected levels of the future cash position. As a consequence management will act immediately by adjusting the current dividend and instituting a revised financial program to eliminate this gap. When the liquidity index (L) is omitted from the regression equation the residual from the equation should reflect changes in business anticipations. By showing that the residuals are positive during periods when profit outlook is optimistic and negative during periods of passimism, Darling concludes that expectations play an important role in dividend policy. His formal hypothesis is: *"Dividends will tend to vary directly with current profits, with past profits, with the rate of amortisation recoveries and with shifts in anticipations of future earnings and will tend to vary inversely with persistent changes in the level of sales" (Darling, 1957, p. 214).* The independent variables in this hypothesis with the exception of amortisation and change in sales need little elaboration. The inclusion of amortisation is based on Darling's feeling that rising and predictable depreciation changes diminish uncertainty with respect to maintaining dividends out of a given level of profits. He includes the change in sales as a proxy for anticipated increases in working capital requirements. Such an increase in working capital would, of course, constrain the firm's liquidity position with the ultimate effect of reducing the firm's ability to pay cash dividends. Darling submits that the results of tests using his dividend equation

provide support for this hypothesis, while admitting that substantial additional research is necessary.

Darling might have given a more satisfactory account of the relationship between the variables in equation (7.4) than Lintner did as a result of his explicit treatment of each of them. In particular, he might have related investment to expectations and the cost of capital. He might have related external funds to the relative cost of different sources of funds and to the capital structure of the firm. Darling neither improve Lintner's basic model nor did he give a more satisfactory account of the determination of the pay-out ratio than Lintner did (Michaelsen, 1961).

Darling implicitly assumed a relationship of constant proportionality between earnings and investment in his main argument (Darling 1957, p. 213). He was more explicit in an earlier discussion of corporate liquidity and dividend policy:

> *"Anticipated growth requirements ..... lead to the development of a policy to withhold a portion of earnings. It is belived that such policies, for most large corporations are extremely 'stable' .... so that this factor may be taken as a constant over fairly long time intervals" (Darling 1955, p. 445).*

Darling did not include investment in his empirical analysis because *"it does not appear that the claim of plant and equipment disbursement, I, against the net inflow of funds is prior to the claim of dividends" (Darling 1957, p. 215).* Darling cited Lintner's work as evidence for this view, but had criticised Lintner's exclusion of variables such as investment as an oversimplification (Darling 1957, p. 211).

Darling's treatment of external funds in the theoretical development of his hypothesis and in his empirical analysis is some what more complicates than his treatment of investment. Even if investment were a constant proportion of earnings, there is no special reason why external funds should be. Darling recognised that net sales of securities

provided funds which might be expected to influence dividend payments. However, he argued later in the course of his analysis that new debt and equity issues were not feasible sources of funds for expansion or other purposes because *"..... debt financing is eventually limited by the lender's preferences concerning the ratio of debt to ownership equity"* and because stock sales *" .... would run the risk of diluting the equity of present owners" (Darling 1957, p. 213).* Darling altered this position in his empirical analysis by mentioning, *"the main theoretical variable omitted from this functional representation is the external financing variable, B. Some tests were run with an interest rate variable included, but the results were inconclusive" (Darling 1957, p. 215).*

In all his tests Darling used aggregate time series data as did both Lintner and Dobrovolsky. He assumed the aggregate time series data, which he used for each of his variables, could be treated as a collection of observations on individual firms. To be consistent he should have used an aggregate time series data for external funds and as well as an 'interest rate variable'. It can not be assumed that in each year the individual firms in Darling's aggregate data absorbed the same proportion of external funds; or, what is more relevant, that none of these firms absorbed any external funds as is implied by his omission of them (Michaelsen, 1961).

The aggregate time-series data which Darling used simply do not bear on his hypothesis of *"how dividend decision be made"* within the individual firm. The criticism made of this methodological procedure in the work of Dobrovolsky and Lintner apply with equal force here. Thus, despite Darling's effort, we are no nearer a satisfactory explanation of dividend behaviour than we were as a consequence of Lintner's work (Michaelsen, 1961).

Darling offers no evidence to support his contention that dividend policy affects stock price through its influence on expectations (Michaelsen, 1961). The view that dividend policy has an independent effect on stock price is not new. However, there has

been little systematic empirical analysis of the relationship between dividend policy and stock price.

7.1.4. Brittain (1966): Corporate Dividend Policy:

The effort by John Brittain for the Brooking Institution, to date, seems to be the most far reaching of the macro time-series studies of dividend behaviour. Brittain was prticularly concerned with explaining the fact that between 1946 and 1962 dividends rose at a 6% annual rate while profits only increased at a 2% rate. His analysis was based on a statistical model designed to explain changes in corporate dividend payments with primary attention given to the determinants that are subject to public policy control notably individual tax rates and tax provisions concerning depreciation. Brittain proposes three general hypotheses to be tested in the study. The hypotheses are: (a) Net earnings is a poor measure of the ability to pay dividends. This is accompanied by the corollary that cash flow would be a better basis for the explaination of dividends. (b) The primary hypothesis about the pay-out ratio was that it would tend to vary inversely with the differential between the higher tax rates on ordinary income and the rates on capital gains. (c) Higher interest rates may also encourage a higher rate of retention to avoid the high costs of external finance or rationing or restrictions imposed by lenders at given interest rates (Brittain, 1966).

Although Brittain extended his research to encompass both industry and firm data, the primary portion of the study was concerned with aggregative time-series analysis of the relationship between changes in dividends and movements in presumably related variables. The analytical approach involved fitting regression models to annual data in an effort to isolate the impact of the various factors. The models were primarily developed to analyze long run relationships rather than short run adjustments (Gillespie, 1971).

The results of Brittain's aggregative time-series analysis are: (a) because of the exaggeration of the squeeze on net earnings by liberalisation of depreciation allowances the measurement of income by 'cash flow' gives a better explaination of dividends since

the beginning of World War II; (b) allowing for long-run variations in the ratio of dividends to net profits in response to individual tax rates and depreciation liberality gives a satisfactory explaination of dividends in the entire 1920-1960 interval; (c) these two tax factors appear sufficient to account for the sharp drop in the pay-out ratio between the late 1920's and the early postwar period and its subsequent recovery; (d) the rate of corporate taxation was found to influence aggregate dividends, but not the pay-out ratio; (e) three other factors, rising interest rates, rapid sales increases, and diminishing corporate liquidity, were all found to depress the fraction of income paid out in dividends, although their influence was far less significant (Brittain, 1966). The pay-out ratio Brittain refers to in item four is the rate of dividends to after tax earnings. Thus while increases in taxation were found to reduce aggregate dividends. The pay-out ratio remained constant since after tax earnings was reduced by a commensurate amount.

The second aspect of Brittain's study was a less detailed time series analysis of the dividend policy of industries and firms. The results verified the depreciation and tax rate hypothesis, and showed interest rates to be influential in a majority of cases. The same models fitted to a sample of forty large firms suggested that depreciation and individual tax rates were each influential in the case of about one-third of the firms.

In the final aspect of Brittain's pooled (cross-section and time-series) data for forty large firms and simultaneously analysed the variation among firms and over time. The results reaffirmed strongly the influence of depreciation and individual tax rates on a firm's propensity to distribute earnings. When dealing with individual firms, however, the tax rate influenced the target pay-out. From the viewpoint of this study Brittain's most interesting findings were that liquidity stimulated dividends while high investment demand produces the opposite effect (Brittain, 1966). The inclusion of investment demand variable improved the model's coefficient of determination substantially. Additionally since the variable entered the model with the expected negative sign it supported the proposition that high investment demand tends to control dividend policy in the long run. The addition of the liquidity variable in conjunction with the investment variable produced

a modest increase in the R^2 thus supporting the contention that liquidity is important in the dividend decision.

7.1.5. Fama and Babiak (1968): Dividend Policy:

Fama and Babiak (1968) started their work on the partial adjusted model of Lintner (1956 and 1963) and the extended work by Brittain (1964 and 1966). They examines the dividend policy of 392 industrial firms over the period of 19 years (1946-64). Lintner and Briattain's developed behavioural model imply that the current dividend is a function of current and past earnings. They (Fama and Babiak) also tested the distributed lag effect.

Fama and Babiak tested behavioural models on firm data, do the simulations, and predict the best-fit behavioural model. The empirical results provide consistent evidence on dividend models for individual firms. The two variable Lintner model including a constant term, D_{t-1}, and E_t, performs well relative to other models; in general, however, deleting the constant and adding the lagged profits variable E_{t-1} leads to a slight improvement in the predictive power of the model. In applying dividend models to the data of most firms, net income seems to provide a better measure of profits than either cash flow or net income and depreciation included as separate variables in the model. Finally, in the models tested by Fama and Babiak, serial dependence in the disturbances does not seem to be a serious problem.

7.1.6. Djarrya and Lee (1981):An Integration Model:

Djarrya and Lee (1981) followed the conceptual development of Waud (1966), in embodying the conceptual ingredients of both dividend-behaviour rationales, and constructed a more general specification of dividend determination. In a long-run framework it is expected that the desired level of dividend can be expressed as a percentage of expected earnings, neither variable being observable for practical purposes. Including the major arguments of the partial-adjustment and information-content theories, they considered the following three equations:

$D^*_t = rE^*_t$.....(7.7)

$D_t - D_{t-1} = a + b_1(D^*_t - D_{t-1}) + u_t$ .....(7.8)

$E^*_t - E^*_{t-1} = b_2(E_t - E^*_{t-1})$ .....(7.9)

which, when combined and simplified, were shown to yield:

$D_t - D_{t-1} = ab_2 + (1 - b_1 - b_2)D_{t-1} - (1 - b_2)(1 - b_1)D_{t-2} + rb_1b_2E_t - (1 - b_2)u_{t-1} + u_t$ .....(7.10)

In performing empirical tests, many varied conclusions can be reached depending on the relevant outcomes. Those most important for the analysis here include:

(i) If the b_2 coefficient of expectations is equal to one, then the generalised model reduces to the simpler partial-adjustment model;

(ii) If the speed-of-adjustment coefficient, b_1, equals one and the intercept 'a' equals zero, the model reduces to the alternative simplified model, an adaptive-expectations model of earnings;

(iii) If the intercept term equals zero and the two 'b' coefficients equal one, then dividend policy is actually a residual decision, much as Higgins (1972) suggested it should be; and

(iv) If all coefficients are significantly different from zero and/or one, then the two previously discussed simplified models are insufficient to describe corporate dividend policy, and the generalised model offers a much needed explanation.

As for the empirical tests Djarraya (1980) has shown that the ordinary least-squares regression technique does not allow for the distinction between the b_1 and b_2 coefficients, and Doran and Griffiths (1978) have shown that the OLS estimates of b_1 and b_2 are inconsistent. Therefore, the maximum-likelihood estimator techniques required to perform the empirical tests were used in conjunction with Marquardt's (1963) nonlinear least-squares regression technique.

Djarrya and Lee (1981) criticised the partial-adjustment and adaptive expectation models and mentioned that neither the partial-adjustment model of dividend behaviour nor the adaptive-expectations model adequately explains the dividend behaviour of firms. The results of Djarrya and Lee (1981) reveal the partial-adjustment and expectations coefficients are significantly smaller than one and greater than zero. However, they suggested a more generalizable model of dividend behaviour on the part of firms is necessary, in order to understand the true nature of the dividend decision.

7.1.7. Gordon (1959): Dividend Policy and Stock Price:

M. J. Gordon (1959) established a definite realtionship between dividend policy and stock price. Gordon undertook a systematical, theoretical and empirical analysis to develop criteria by which an optimum dividend policy could be determined. He attempted to discover the optimum pay-out ratio which could be the basis for decision rules to guide dividend policy. Gordon sought a firm grounding for these rules in economic theory. The critics of Gordon's work cited very strong word for his theoretical analysis:

> *"....his theoretical analysis is not convincing..... His data do not bear on his hypothesis and did not provide a test for it. (Michaelsen 1961, p. 23).*

However, Gordon's empirical analysis is quite similar to the kind of analysis that has a view that dividends have an independent affect on stock price.

Gordon used several empirical models to test his hypothesis. The following equation is one of his simplest models:

$$P = a_0 + a_1 D + a_2 (Y - D) \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (7.11)$$

Where,

P = Price of a share of common stock,

D = Year's dividend,

Y = Year's earnings, and

Y - D = Year's retention.

Gordon (1959) found in each of his samples that the coefficients of dividends, a_1, was significantly larger than the coefficient of retention, a_2.

Gordon interpreted this as support for his hypothesis that dividends have an independent effect on stock price quite apart from the effect of earnings. Graham and Dodd (1951) presented a model of stock price formulation which has similar implications. Their evidence was based on data from a small number of firms specially selected to demonstrate the relevance of this model. The theoretical justification which they offered as the basis for the effect of dividends on stock price was considerably less rigorous than Gordon's (Michaelsen, 1961).

Michaelsen (1961) cited Gordon's interpretation as both statistically and methodologically difficult. It has been shown that random variations in earnings, from whatever source, will cause the estimate of the population coefficient of dividends, a_1, to be larger than the corresponding estimate of coefficient of retentions, a_2, even when these two population parameters are equal (Modigliani and Miller, 1959; and Benishay, 1961).

This can readily been seen in equation (7.11) by noting that dividends can be measured exactly but that earnings and therefore retentions are subject to considerable measurement error. Gordon also used averages of earnings over a period of years to correct this measurement error. Marshall Kolin (1961), on the other hand, used a distributed lag procedure to estimate earnings, rather than simple averages, in his study of the effect of dividends on stock price but he did not find a larger coefficient for dividends

than for retentions which strongly suggests that dividend has no independent effect on stock price.

Even if Gordon's coefficients were not subject to the statistical bias just described, his interpretations of these coefficients as evidence that dividends affect stock price would be suspect on methodological grounds.

However, Michaelsen (1961) cited in his concluding word:

"...Gordon's work provides no evidence for the relationship between stock price and dividend policy." (Michaelsen 1961, p. 26).

7.1.8. Michaelsen (1961): Determinants of Dividend Policies:

Two studies by Michaelsen provide useful preliminary work in the area of dividend policy. The original study, completed in 1961 as a doctoral dissertation at the University of Chicago, tried to determine if dividends are the primary active variable or if dividends are simply the passive residual in investment and financial decisions. Michaelsen asserts that the standard explanations of dividend policy, typified by Lintner's work which gives dividends a primary position in financial decisions, are inadequate both of theoretical and methodological reasons. He summarises his criticism of theoretical inadequacy on the grounds that the earlier works are inconsistent with observed behaviour in these important respects. These are: *"(1) The assumed proportional relationship between investment and earnings is not consistent with recently gathered evidence on the investment behaviour of corporations, (2) The explicit exclusion, or at best, tacit omission of external funds from the process of dividend determination is contrary to casual observation of the capital markets, and (3) The assumed relation between dividend policy and stock price is not supported by available evidence." (Michaelsen 1961, p. 27).*

Michaelsen feels that the studies of both Lintner and Darling are methodologically weak because the aggregate data used in their studies concealed interfirm differences. In

view of these shortcomings Michaelsen concludes that the *'primary and active'* explaination of dividend behaviour of these authors is unconvincing both methodologically and theoretically.

As an alternative to the primary and active theory of dividends Michaelsen submits that dividends are the passive element in financial decisions. He supports this contention by hypothesising that corporate investment is a function of expectations of future earnings and that such expectations are uncertain. As a result investment will vary considerably from year to year. If external funds are excluded from the financing mix dividends should be irregular since investment must be financed out of current earnings. Under these circumstances dividends are the residual funds after all profitable investments have been undertaken. With respect to the more realistic situation where outside financing is included Michaelsen states,

> *"....if external funds are an important and continuing element in the financial decisions of corporations, the link between investment and dividends is broken. Dividnend policy may then be only indirectly related to current investment and current earnings. In a word, dividends may then be a 'passive' element in financial decisions." (Michaelsen 1961, p. 29).*

Michaelsen proposed two hypotheses to explain corporate dividend policy. The differential growth hypothesis states that, *"firms that have the greatest growth potential retain a large proportion of earnings and, conversely, firms that have only meager growth potential retain a small proportion of earnings." (Michaelsen 1961, p. 54).* He further theorised that firms with a low pay-out ratio will also pay irregular amounts since investment opportunities are irregular. If this hypothesis is correct dividend stability and growth potential should be correlated in this manner. Michaelsen's test of this hypothesis using several different measures for growth potential and dividend stability failed to substantiate growth as a meaningful explanation for dividend policy.

As an alternative to the differential growth hypothesis Michaelsen proposed the diverse policies hypothesis, which holds that, *"there are two general kinds of dividend policy which are associated with firm size: in large firms, dividends are used to communicate managerial expectations of future prospects; in small firms dividends convey no such information but are liquid assets which can not be profitably invested within the firm. The use of dividends as a means of communication by large firms is due to (a) the greater reliability of the information about future prospects available to these firms, and (b) to the relatively lower cost of using dividends in this manner of these firms."(Michaelsen 1961, p. 61).* To test this hypothesis Michaelsen measured the correlation between firm size and dividend stability, and the correlations between firm size and the use of external funds. He justifies testing the latter relationship on the grounds that given the sporadic occurrence of investment projects outside funds must be used if dividend stability is to be maintained. Michaelsen found some correlation to support the diverse policies hypothesis. However, he points out that the sample was not originally intended to test this hypothesis and consequently the results may be of questionable value.

In a subsequent paper Michaelsen tried to demonstrate that the hypothesis relating dividend policy to the concept of a target pay-out ratio is invalid both pragmatically and theoretically. He shows that the target pay-out hypothesis fails to account for *"(a) the record of per share dividend declaration, including extras and split ups, and its relationship to the behaviour of assets, earnings, and market value over time; and (b) the response of share price to announcements of changes in dividends" (Michaelsen, 1965).* In addition he contends that the target pay-out hypothesis is theoretically weak since it is inconsistent with the tenents of share price maximisation. Elaborating on this point he says, *"if external funds are used to stabilise dividends, the target pay-out ratio can not be held to have direct link to the maximisation process unless it can be shown that dividends enter as an independent argument in the demand function for shares - that is independent of the capital budget and other financial variable." (Michaelsen, 1965).* Michaelsen feels that a test of the target pay-out hypothesis using the standard methodologies is extremely difficult.

As an alternative explanation of corporate dividend behaviour he proposed the inertia hypothesis which holds, *"in the absence of a compelling reason to do otherwise, management should pay the same regular quarterly dividend per share as the last quarter. Put differently the dividend behaviour of firms is largely a matter of inertia" (Michaelsen, 1965).* Supporting the inertia hypothesis is the relative stability of aggregate dividends as compared with aggregate earnings in the national income accounts. Michaelsen holds that Lintner's findings may reflect no more than these factors and the strong upward growth trend in dividends and earnings over the period he studied. He supports this with the following argument:

> *"The 'excellent correlations .... and highly significant regression coefficients' he found are to be expected when a strong trend exists in both the dependent and independent variables. The fact that the regression coefficient for current earnings is less than that for lagged dividends could result from the uncontrolled or random component in reported earnings which is not present in dividends" (Michaelsen, 1965).*

Two indirect tests were performed on the inertia hypothesis. The first test involved an examination of the dividend behaviour of individual firms. The second test involved an investigation of the response of share prices to announcements of changes in dividends. In examining the behaviour of 107 sample firms Michaelsen points to the passing of regular cash dividends by thirty five firms although reported earnings increased in 56 percent of the periods in which dividends were omitted as prima facie evidence of non-target dividend policies (Michaelsen, 1965).

In testing the response of share price to changes in dividends Michaelsen used Modigliani and Miller's information content theory as a starting point. This theory holds that where a firm has followed a policy of dividend stabilisation with a long established target pay-out ratio investors are likely to interpret a change in the dividend as a change in

management's view of future profits for the firm. Michaelsen feels that if his conclusions regarding dividend omission and the target pay-out ratio are correct and if Modigliani and Miller's informational content theory is correct there should be no association between changes in share prices over short periods following dividend announcement dates and changes in dividends of the firms which periodically omit dividends. Michaelsen's test of this proposition produces a positive association between these variables suggesting that the informational content of dividend announcements is imparted by a mechanism different from that posited by Modigliani and Miller (Michaelsen, 1965).

Michaelsen's early hypotheses of the determinants of dividend policy provide little insight into the question of how dividend policy is set. His inertia hypothesis however has interesting connotations for this study. It suggests that attempts to define dividend policy through target pay-out rules will probably be unsuccessful. However, the unsettling results of his investigation strongly assert that it is changes in dividend rather than their continuation at previous levels which needs explanation.

7.1.9. Thompson and Walsh (1963): Survey of 195 Industrial Firms:

Probably the most broadly based non-statistical investigation of dividend policy G. Clark Thompson and Francis J. Walsh, Jr., conducted an extensive poll of decision makers at 195 large industrial firms. The study done for the National Industrial Conference Board and provides additional insight into dividend policy and substantiates many of Lintner's conclusions and much of Darling's extension of Lintner's work. The major findings of Thompson and Walsh was that continuity of dividend payments is a matter of paramount importance in shaping dividend policy for most of the firms contacted. This finding is consistent with the intertia hypothesis developed by Michaelsen which holds that in the absence of compelling reasons to do otherwise the same quarterly dividend per share as the previous quarter should be paid.

Their findings are perhaps best illuminated by their statement that,

> *"Executives frequently comment that they prefer a conservative dividend rate that can be maintained at the same level through bad times as well as good. They say that when earnings justify it, an extra dividend is distributed at the end of the fiscal year. And they state further that they oppose any attempt to raise the regular dividend rate unless there is a reasonable assurance that it can be maintained in the future, because they would be extremely reluctant to reduce a rate once it became established" (Thompson and Walsh, 1963).*

Thompson and Walsh also polled the executives of the firms to determine what factors were considered in formulating dividend policy. The five principal decision variables seem to be: (1) present cash level, (2) anticipated need for funds, (3) past and prospective earnings, (4) interest of shareholders, and (5) taxes. The stress on liquidity and expectatons which is evidenced in this list provides empirical support for Darling's hypothesis that dividends are a function of liquidity and expectations, as well as profits.

Thompson and Walsh's study also substantiates the generalisations about dividend policy which have been presented in most introductory finance texts. However, the determinants of dividend policy disclosed by Thompson and Walsh's opinion survey and the determinants presented in the basic finance texts are more extensive than the influencing variables substantiated by the empirical efforts of Lintner, Darling, Brittain etc.

7.1.10. Pogue (1968 and 1971): Dividend and Investment:

In the research effort probably most closely related to this study Pogue tested the hypothesis that *"corporate dividends are determined, at least in part, by the demand for investment funds and the availability or cost of funds from other sources than retained*

earnings" (1971, p. 182). Pogue developed a theory of corporate dividends which places the operations of the firm subject to a cash flow constraint. The constraint is presented as:

$$T = K + W = (1 - d) P + B + E \quad \text{..... (7.12)}$$

Where,

K = The flow of net investment in fixed capital; gross capital expenditures minus depreciation charges,

W = The flow of net investment in working capital where working capital is defined as current assets minus current liabilities. Current liabilities include debt with a maturity of less than one year,

T = K + W; the time rate of change of the stock of fixed and working capital (T),

P = Net income after taxes and preferred dividends; income available for distribution to common stockholders,

d = The proportion of income paid out in dividends; (1 - d) is the proportion of income retained,

E = Net cash proceeds from new equity issue (both common and preferred stock), and

B = Net cash proceeds from long-term borrowing; long-term debt is defined as debt with a maturity greater than one year (Pogue, 1971).

This equation shows that borrowing, new equity issues, and earnings retention are potential substitutes for financing a given amount of new investments. Pogue based his study on the assumption that only if dividends are given complete priority over investment spending and utilization of external financing would the dividend decision be independent of these considerations.

However, Pogue concludes:

> *"...in general, one would expect dividends to be influenced by investment spending and managerial willingness to finance investment with external funds (debt and equity issue) rather than retained earnings." (1971, p. 185).*

To develop a testable model Pogue (1971) states:

> *"The firm's flow of retained earnings and net cash proceeds from borrowing and new equity issues are assumed to be determined by the requirement that the market and imputed costs of investment financing be minimized subject to the cash flow constraint. Investment spending (T) by the firm is assumed to be exogenously determined independent of the cost or supply of investment funds."(p. 208).*

Using least square regression analysis Pogue attempted to determine the importance of a number of statistical variables in the corporate dividend decision. The specific variables he tested were: (a) Income, (b) Indebtedness, (c) Income variability, (d) Industry dividends, (e) Industry debt, (f) Investment spending, and (g) Sales change. Pogue's findings support the widely verified conclusion that corporate income is the most important determinant of dividends. In addition, he found that:

> *"....dividend payments, given income, are (1) inversely related to the demand for investment funds and the market and imputed costs of borrowing funds, and (2) directly related to the imputed cost of retained earnings." (Pogue 1968, p. 63).*

This later conclusion seems inconsistent with intuitive beliefs until it is pointed out that the imputed cost of retained earnings by Pogue's definition is the return that the

shareholder could have earned had the earnings been paid out. The problems in trying to measure this imputed cost are extensive, and consequently Pogue's results must be viewed with some scepticism. Pogue hastens to point out that while the investment and cost of retained earnings variables have some impact on the dividend decision their influence is still relatively insignificant compared with corporate income.

Detracting from Pogue's conclusions is the heterogeneity of the regression coefficients over time. He found that the hypothesis of coefficient homogeneity could be rejected at the 1% level of significance. Pogue, however, contends that the heterogeneity of the coefficients may be due to an overstatement of the degree of freedom in calculating F-statistic. The tests of regression coefficient homogeneity assume that the error terms for each firm are independent. However, because of firm effects there may be an autocorrelation of the error terms for each firm. An autocorrelation of the error terms would cause the degree of freedom to be overstated unless an appropriate adjustment was made. When the F-statistics are adjusted for the possible overstatement in degrees of freedom the hypothesis of inter-temporal coefficient homogeneity can not be rejected at the 10% significance level for any of the equations (Pogue, 1968).

7.2. Conclusion:

This chapter reviewed all the major studies conducted on dividend policy and behaviour since 1950s. While these studies have provided an increased understanding of corporate dividend policy, there has not been a common theoretical foundation for all of the investigations. However, the findings of the empirical studies vary a large extent among the researchers but there is an unanimity among the researchers that the issue of dividend policy and behavior is important.

This chapter is basically a chronological review of the major studies on dividend policy and behaviour, which begins with Dobrovolsky's (1951) Corporate Income Retention. All of these reviews can be divided into three basic categories: *firstly,* the studies on dividend policy and behaviour; *secondly,* the studies on the impact of dividend

policy on stock prices; and *thirdly,* the imact of dividend policy on other aspects of the corporations, e.g., investment and financing decisions. The first part of the review basically concentrates on the dividend policy and behaviour where the main theme of analysis is whether dividend policy primarily governed by current profitability and and dividends paid in the previous years or by any the factors. The second part of the review concentrates whether there is any impact of dividend policy on stock price or not. The final part of the review concentrates whether there is any impact of dividend policy on the other corporate decisions (e.g., investment and financing) or not. Through these reviews one thing has become more clear that the basic element of the dividend policy is the current profitability and lagged dividends, i.e., the dividend behavioural models are quite right in their directions. However, the reviews of the second and third part also make it clear that dividend policy has an impact on share prices and as well as on the investment and financing decisions of the corporations.

Despite some disagreement, these reviews clearly show the unanonimous decisions among the researchers about the dividend policy and behaviour and there is a big unanimity among the dividend behavioural models that dividend policy is basically depend on the profitability and lagged dividends. However, there are two major problems about the support of the dividend behavioural models: *firstly,* all of these models are developed in the developed markets; and *secondly,* there are only two empirical studies (Garg *et al.* 1996, and Mishra and Narendar, 1996) on these models but both of them are on the emerging markets. However, both Garg *et al.* (1996) and Mishra and Narendar (1996) identified the determinants of dividend policy and they mainly used behavioural models in their empirical study, so, their studies do not quite test the validity of the behavioural models in the emerging economies. These reviews and the empirical studies of the behaviour models left behind some basic research questions, e.g., whether the behavioural models, which have developed in the developed economies practically work either in developed or in emerging markets or not; whether the dividend behaviour is the same in both developed and emerging markets or not. Therefore, this study will basically deal with the following two research questions:

(1) Whether the behavioural models, which have developed in the emerging markets work in the emerging markets, and

(2) Whether the dividend policy in the emerging markets follow the basic principles of the behavioural models?

Chapter Eight: Dividend Policy and Behaviour in an Emerging Market: An Empirical Investigation on the Partial Adjustment Dividend Behaviour Models

8.0. Introduction

Dividend behaviour of the emerging financial markets is assumed to be quite different because emerging markets are quite dissimilar to the developed markets. Several studies have been published on dividend policy and behaviour of developed markets but very few studies published have examined dividend policy and behaviour of emerging markets and none of the studies have yet been published on dividend policy and behaviour of the Dhaka Stock Exchange. The major objective of this study is to identify the dividend policy and behaviour of an emerging market. Partial adjustment dividend behaviour models are tested on the Dhaka Stock Exchange data over the period of 1988-1997 to identify the dividend policy and behaviour of an emerging market.

The empirical results suggest that Brittain's (1966) dividend behaviour model offers satisfactory explanation of dividend behaviour of the Dhaka Stock Exchange listed companies. However, the empirical results suggest that dividend decision is primarily governed by current profitability for measuring the capacity of the companies to pay dividends and dividends paid in the previous years, i.e., lagged dividends. Moreover, the empirical results identified cash flow as the better measure of the company's ability to pay dividends.

The rest of this chapter is divided into four sections. A brief review of the partial adjustment dividend behaviour models for identifying the dividend policy and behaviour of an emerging market and selection of variables for the partial adjusted models are included in section 8.1. Section 8.2 contains the description of data and sample of the empirical analysis. The empirical results are reported in section 8.3. A brief summary and the concluding remarks are incorporated in section 8.4.

8.1. Theoretical Background

This part of the chapter contains a brief review of the partial adjustment dividend behaviour models along with the selection of variables to identify the dividend policy and behaviour of an emerging financial market and to identify the best-fit partial adjustment dividend behaviour model of an emerging market.

8.1.A. Lintner's (1956) Partial Adjustment Dividend Behaviour Model

In the pioneering study in 1956, Professor John Lintner investigated dividend behaviour over an extended period of time. He viewed that dividend pay-out is a function of net current earnings after tax and dividend pay-out in the previous years (lagged dividends).

Changes in dividend pay-out ratio $\{\Delta DPR = (Dividend / Sales)_t - (Dividend / Sales)_{t-1}\}$ is considered as the dependent variable of the model. Current profitability (Net Profit After Tax / Sales), and lag of dividend pay-out ratio are considered as the independent variables of the model.[9]

8.1.B. Darling's (1957) Partial Adjustment Dividend Behaviour Model

In the study, which followed Lintner's effort Paul Darling modified Lintner's formulation to include expectations and liquidity in the determination of dividend policy. Darling in essence proposed a more complete explanation of dividend behaviour without Lintner's principal emphasis. Darling hypothesised that dividends are a function of current investment and current use of external funds as well as past dividends and current earnings. However, he concludes that lagged profit would offer a better explanation to the current levels of dividends. In addition, he added depreciation and amortisation recoveries as a source of funds, and changes in sales as a working capital requirement.

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[9] All the considered variables have been scaled (deflated) by common size (sales) to remove heteroskedasticity and outlier problems.

Changes in dividend pay-out ratio {$\Delta DPR = (Dividend / Sales)_t - (Dividend / Sales)_{t-1}$} is considered as the dependent variable of the model. Current profitability (Net Profit After Tax / Sales), lag of profitability, amortisation (Depreciation and Amortisation / Sales), and growth (changes in sales) are considered as the independent variables of the model.

8.1.C. Brittain's (1966) Partial Adjustment Dividend Behaviour Model

The effort by John Brittain for the Brooking Institution, to date, seems to be the most far reaching of the macro time-series studies of dividend behaviour. Brittain's model suggested that cash flow is the better measure of the company's ability to pay dividends.

Changes in dividend pay-out ratio {$\Delta DPR = (Dividend / Sales)_t - (Dividend / Sales)_{t-1}$} is considered as the dependent variable. Cash flow (Net Profit After Tax + Depreciation / Sales), and lag of dividend pay-out ratio are considered as the independent variables of Brittain's model.

8.1.D. Fama and Babiak's (1968) Partial Adjustment Model

Fama and Babiak (1968) started their work on the partial adjusted model of Lintner (1956 and 1963) and the extended work by Brittain (1964 and 1966). They examined the dividend policy of 392 industrial firms over the period of 19 years (1946-64).

Fama and Babiak tested behavioural models on firm data, did the simulations, and predicted the best-fit behavioural model. The empirical results provide consistent evidence on dividend models for individual firms. They find the two variable Lintner models including a constant term, Current earnings 'E_t', and lag dividend 'D_{t-1}', perform well relative to other models. However, they also observed that net income seems to provide a better measure of profits than either cash flow or net income or depreciation included as separate variables in the model.

The dependent and the independent variables are considered the same as Lintner's model. However, as Fama and Babiak tested their models on the individual firm data, so, Fama and Babiak's supported partial adjustment dividend behaviour model is tested on the individual firm data rather than aggregate data in this study.

Lintner (1956) was the first who introduced a partial adjustment dividend behavioural model and his empirical work is the best and the most recognised empirical investigation on dividend behaviour to date. Moreover, Darling (1957) extended and Brittain (1966) modified Lintner's basic behavioural model by altering and adding different parameters. In addition, Fama and Babiak (1968) tested Lintner and Brittain's developed partial adjusted dividend behaviour models on the individual firm's data rather than aggregate data and identified Lintner's model as the best partial adjustment dividend behaviour model.

There are only two empirical investigations (Garg *et al.* 1996 and Mishra and Narender, 1996) of partial adjustment models on Indian data. However, both of the studies found Lintner's (1956) partial adjustment dividend behaviour model as the best-fit model and concluded that dividend policy is primarily determined by the current profit after tax and dividends paid in the previous years, i.e., lagged dividends. The summary of Garg *et al.'s* (1996) and Mishra and Narender's (1996) studies on partial adjustment dividend behaviour models are presented in Table 8.1.

The empirical part of this chapter tested all the partial adjustment dividend behavioural models on the Dhaka Stock Exchange data to investigate the dividend policy and behaviour in an emerging market. This study also tries to identify the best-fit dividend behavioural model in an emerging market through empirical investigation.

Table 8.1: A Brief Summary of the Major Empirical Studies on Partial Adjustment Models:

Author	Data Set	Dependent Variable	Independent Variables	Method	Findings Support Dividend Behaviour Model
1. Garg *et al.* 1996	Cross-section of 44 Indian textile firms over the period of 1980-81 to 1989-90	Total Equity Dividend	Net Current Earnings After Tax in 't', and Total Equity Dividend in 't-1'	Lintner's Model	Lintner's Partial Adjustment Model
2. Mishra and Narender, 1996	Cross-section of 39 Indian State Owned Enterprises over the period of 1984-85 to 1993-94	Dividend Per Share	Earnings Per Share in 't', and Dividend Per hare in 't-1'	Lintner's Model	Lintner's Partial Adjustment Model

8.2. Data and Methodology

8.2. A. Data

The Dhaka Stock Exchange listed all non-financial sector companies is primarily considered as the sample of the study.[10] Companies are then selected[11] for this study by considering the regularity of paying dividends and non-negative profits (net profit after tax). The Dhaka Stock Exchange listed 83 non-financial sector companies are then taken into account after screened out the irregular dividend payers and the companies with negative profits for this study. Companies are then filtered by considering the dividend payments at least five years among the sample period (1988-97) and also by considering different other characteristics, e.g., selected sample should represent all the sectors (incorporation of companies from all non-financial sectors), different sizes (large, medium, and small), product diversity (single product and multiple products), activity (active and inactive), frequency of dividend payments (companies pay dividends always and companies pay dividends sometimes), and the pay-out (high, medium and low pay-out) for selecting the final sample. The final sample then reduced to 51 Dhaka Stock Exchange listed non-financial sector companies.

However, 51 carefully selected companies represented all the non-financial sectors (12 are from Engineering, 7 are from Food and Allied, 8 are from Jute and Textile, 10 are from Pharmaceuticals, and 14 are from Miscellaneous Sector). The sample consists of 8 high pay-out companies (payment of dividend 50% and more), 9 low pay-out companies (payment of dividend 5% or less) and 34 medium pay-out companies (payment of dividend is between 5% and 50%). However, the sample represents 14 large companies (market capitalisation is 1000 million Taka and more), 7 small companies (market capitalisation is 5 million Taka or less), and 30 medium companies (market capitalisation is between 110-150 million Taka). Moreover, the sample consists of 41 actively traded

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[10] Financial sector companies are excluded from the study because accounting system of financial sector companies are quite different from non-financial sector companies.

[11] It is worth mentioning that researchers always take different company and market characteristics into consideration in selecting sample for testing behavioural models.

companies and 10 inactively traded companies of the Dhaka Stock Exchange. The sample also comprises 40 single product and 11 diversified products companies. In addition, the sample also represents 15 companies that paid dividends all 10 years and 36 companies that paid dividends 5-9 years.

All the required data for empirical investigation on the partial adjustment dividend behavioural models are collected from the published annual reports of the selected companies.

8.2. B. Models

8.2. B. I. Lintner's (1956) Partial Adjustment Dividend Behavioural Model

Hypothesis:

H_0: *Changes in dividend pay-out ratio (ΔDPR) is not a function of net current earnings after tax (PROFIT) and dividend paid in previous years (lagged dividends) (LDPR).*

Model:

$$\Delta DPR_t = \alpha + \beta_1 PROFIT_t + \beta_2 DPR_{t-1}\ (LDPR) + \varepsilon_t$$

Where,

ΔDPR_t and DPR_{t-1} = Changes in dividend pay-out ratio and lagged dividend pay-out ratio respectively,

$PROFIT_t$ = The ratio of net profit after tax to sales in period 't',

α = Constant term,

$\beta_1 = c_i r_i$ (where c_i is the 'speed-of-adjustment coefficient' and r_i is the firm's 'target ratio' of dividends to profits),

$\beta_2 = -\ c_i$ (where *ci* is the 'speed-of-adjustment coefficient' for lagged dividend), and

ε_t = Error term.

8.2.B. II. Darling's (1957) Partial Adjustment Dividend Behavioural Model

Hypothesis:

H_0: *Changes in dividend pay-out ratio (ΔDPR) is not a function of net current earnings after tax (PROFIT), lag profits (LPROFIT), amortisation (AMORTISE), and sales growth (GROWTH).*

Model:

$$\Delta DPR_t = \alpha + \beta_1 PROFIT_t + \beta_2 PROFIT_{t-1} \text{ (LPROFIT)} + \beta_3 AMORTISE_t + \beta_4 GROWTH_t + \varepsilon_t$$

Where,

ΔDPR_t = Changes in dividend pay-out ratio,

$PROFIT_t$ and $PROFIT_{t-1}$ = The current profitability and lagged profitability respectively,

$AMORTISE_t$ = The ratio of depreciation and amortisation to sales,

$GROWTH_t$ = The sales growth $((Sales_t - Sales_{t-1}) / Sales_{t-1})$,

α = Constant term,

$\beta_1 = c_i r_i$ (where c_i is the 'speed-of-adjustment coefficient' and r_i is the firm's 'target ratio' of dividends to profits),

$\beta_2 = - c_i$ (where *ci* is the 'speed-of-adjustment coefficient' for lagged profits),

β_3, and β_4 = The coefficients of amortisation and sales growth respectively, and

ε_t = Error term.

8.2. B. III. Brittain's (1966) Partial Adjustment Dividend Behavioural Model

Hypothesis:

H_0: *Changes in dividend pay-out ratio (ΔDPR) is not a function of cash flow (CFLOW) and dividend paid in previous years (lagged dividends) (LDPR).*

Model:

$\Delta DPR_t = \alpha + \beta_1 CFLOW_t + \beta_2 DPR_{t-1}$ (LDPR) + ε_t

Where,

ΔDPR_t and DPR_{t-1} = The changes in dividend pay-out ratio and lagged dividend pay-out ratio respectively,

$CFLOW_t$ = The ratio of cash flow (net profit after tax + depreciation) to sales in period 't',

α = Constant term,

$\beta_1 = c_i r_i$ (where c_i is the 'speed-of-adjustment coefficient' and r_i is the firm's 'target ratio' of dividends to cash flow),

$\beta_2 = - c_i$ (where *ci* is the 'speed-of-adjustment coefficient' for lagged dividend), and

ε_t = Error term.

8.2.B.IV. Fama and Babiak's (1968) Partial Adjustment Dividend Behaviour Model[12]

Hypothesis:

H_0: *Changes in dividend pay-out ratio (ΔDPR) is not a function of net current earnings after tax (PROFIT) and dividend paid in previous years (lagged dividends) (LDPR).*

Model:

$\Delta DPR_t = \alpha + \beta_1 PROFIT_t + \beta_2 DPR_{t-1}$ (LDPR) + ε_t

Where,

ΔDPR_t and DPR_{t-1} = Changes in dividend pay-out ratio and lagged dividend pay-out ratio respectively,

$PROFIT_t$ = The ratio of net profit after tax to sales in period 't',

α = Constant term,

$\beta_1 = c_i r_i$ (where c_i is the 'speed-of-adjustment coefficient' and r_i is the firm's 'target ratio' of dividends to profits),

$\beta_2 = - c_i$ (where *ci* is the 'speed-of-adjustment coefficient' for lagged dividend), and

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[12] Fama and Babiak's (1968) model is tested on individual company data rather than aggregate data but the hypothesis, the model, and the variables are as same as Lintner's (1956) model.

ε_t = Error term.

8.3. Empirical Results

8.3. A. Descriptive Statistics

The changes in dividend pay-out ratio over the period of 1988-97 are .051%. The profitability and lag of dividend pay-out ratio are 7.0% and 3.1% respectively. However, the growth rate of sales, and depreciation and amortisation recoveries are 11.56% and 4% respectively and the average cash flow is 9.1%. These results indicate a very low level of changes in dividend pay-out ratio and higher level of working capital requirements of the Dhaka Stock Exchange listed companies. However, the working capital requirements are far more than the available sources of funds, i.e., depreciation and amortisation recoveries. Moreover, even though the level of profitability and cash flow vary at a large extent but the figures indicate that cash flow is 2.1% more than the current earnings of the regular dividend paying companies of the Dhaka Stock Exchange (Table 8.2).

8.3. B. Pearson's Correlation Matrix

The Pearson's correlation matrix shows the expected relationship of all the independent variables with dependent variable except depreciation and amortisation recoveries. However, the correlation matrix shows the correlation between the independent variables are either low degree or moderate degree, which suggests the absence of multicolinearity between independent variables. As suggested by Bryman and Cramer (1997), the Pearson's *r* between each pair of independent variables should not exceed 0.80; otherwise independent variables with a coefficient in excess of 0.80 may be suspected of exhibiting *multicolinearity.* Multicolinearity is usually regarded, as a problem because it means those regression coefficients may be unstable (Bryman and Cramer, 1997). Several scholars including Mendenhall and Sincich (1989), Hair *et al.* (1995), and Freund and Wilson (1998), state that multicolinearity can be quite difficult to detect where

there are more than two independent variables. Moreover, the colinearity diagnostics provided by SPSS including colinearity statistics (Tolerance and VIF), condition index,

Table 8.2: Descriptive Statistics of the Variables

Variables	Mean	Standard Deviation	Minimum	Maximum
ΔDPR	5.1E-04	2.6E-02	.15	.15
PROFIT	7.0E-02	6.84E-02	.00	.52
LDPR	3.1E-02	3.32E-02	.00	.23
LPROFIT	7.0E-02	6.84E-02	.00	.52
AMORTIZE	4.0E-02	3.76E-02	-.03	.23
GROWTH	.1156	.4089	-.99	3.03
CFLOW	9.1E-02	9.22E-02	-.26	.53

and variance proportion support the Pearson's correlation coefficients and document no proof of multicolinearity problem in the regression models (Table 8.3a, 8.3b, and 8.3c).

8.3. C. Regression Results

There are two types of Ordinary Least Square (OLS) regression models run to identify the dividend policy and behavior in an emerging market: *firstly*, ten yearly average cross-section regression model, and *secondly*, pooled regression model. In the pooled regression model, nine (10-1) year dummies considered for 10 years (1988-97) period. However, the coefficient of none of the year dummies is significant, which indicates no impact of time on the model. As time does not have any impact on the model, so, incorporation of year dummies has rather worsen the overall significance of the regression models.

Ramsey's RESET test (Ramsey, 1969) and White test (White, 1980) are employed for checking heteroskedasticy problem of the partial adjustment dividend behavioural models and both the tests are unable to reject the hypothesis of homoskedasticity for each and every model. So, the residuals of all the behavioural models are homoskedastic. The Durbin-Watson is close to 2 in all the regression models, which also indicates no sign of autocorrelation problem in the regression models.

8.3. C. I. Lintner's (1956) Dividend Behavioural Model

The overall F_{score} = 57.267 and 10.649 for cross-sectional and pooled regression models respectively and both the values are significant at 1% level (p<.000). However, the adjusted R^2 are 0.220 and 0.210 respectively for cross-sectional and pooled regression models.

The standardised beta coefficients of the profitability and lagged dividend (LDPR) variables are .282 and .276, and -.503 and -.502 respectively for cross-section and pooled regression models. The coefficients of these variables are in the predicted direction and highly significant (p<.000). However, the empirical results show the more influence of

Table 8.3a: Correlation Matrix: Pearson Indices

Variables	ΔDPR	PROFIT	LDPR
ΔDPR	1.000		
PROFIT	.089	1.000	
LDPR	-.399***	.384***	1.000

Note: ***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

Table 8.3b: Correlation Matrix: Pearson Indices

Variables	ΔDPR	PROFIT	LPROFIT	AMORTIZE	GROWTH
ΔDPR	1.000				
PROFIT	.089	1.000			
LPROFIT	.018	.786***	1.000		
AMORTIZE	-.107**	.157***	.183***	1.000	
GROWTH	-.010	-.070	-.071	-.069	1.000

Note: ***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

Table 8.3c: Correlation Matrix: Pearson Indices

Variables	ΔDPR	CFLOW	LDPR
ΔDPR	1.000		
CFLOW	.115**	1.000	
LDPR	-.399***	.431***	1.000

Note: ***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

lagged dividend on dividend changes than profitability because the Dhaka Stock Exchange listed non-financial sector regular dividend paying companies basically follow stable dividend policy based on dividend per share (DPS). As the companies pay stable dividends, e.g., 15% (DPS) on the face value, the managers are reluctant to cut the dividend even though they make loss in certain year. But they change the pay-out policy every few years depending on the profitability, i.e.; if the companies make huge profit then they certainly change the dividend payment rate, e.g., 15% to 20% and keep going with that for a certain period. In contrast, the basic assumption of the partial adjustment dividend behaviour model is the target ratio of dividend to profits. The empirical findings are quite consistent with the practice of the companies under consideration, i.e., dividend change basically depend on the lagged profits but profitability encourage the firms to change dividend policy, i.e., speed of adjustment work to take increasing or decreasing decision of the stable dividend policy but dividends are perfectly adjusted with the levels of profitability. Therefore, the empirical results suggest that Lintner's dividend behavioural model is all right for the Dhaka Stock Exchange but not best-fit model because of their dividend policy (stable pay-out policy rather than partial adjustment) (Table 8.4).

8.3. C. II. Darling's (1957) Dividend Behavioural Model

The overall F_{score} = 1.569 and 0.832 for cross-sectional and pooled regression models respectively and but none of them is significant at higher level. However, the adjusted R^2 are 0.006 and -0.006 respectively for cross-sectional and pooled regression models.

The standardised beta coefficients of the profitability and lagged profitability (LPROFIT), amortisation, and growth variables are .180 and .165, -.103 and -.086, -.062 and -.061, and -.028 and -.046 respectively for cross-section and pooled regression models. The coefficients of these variables are in the predicted direction except depreciation and amortisation recoveries are not highly significant. While lag profitability coefficients are not significant, both the profitability and lagged profitability coefficients

Table 8.4: Lintner's Model Summary[a, b]

Refined Constructs	Cross-sectional Regression Model: Unstandardised Coefficients	Standardised Coefficients	Standard Error	T Value	T Significance	Pooled Regression Model: Unstandardised Coefficients	Standardised Coefficients	Standard Error	T Value	T Significance
Constant	7.0E-03		.002	3.830	.000	8.7E-03		.004	2.209	.028
PROFIT	.110	.282	.019	5.897	.000	.108	.278	.019	5.684	.000
LDPR	-.393	-.503	.037	-10.509	.000	-.393	-.502	.038	-10.381	.000
F – ratio value		***57.267******				***F – ratio value***		***10.649******		
R^2		***.223***				R^2		***.231***		
Adjusted R^2		***.220***				***Adjusted R^2***		***.210***		
N		***51***				***N***		***503***		

Note: a. Dependent Variable: Changes in Dividend Payout Ratio (ΔDPR)
b. All Requested Variables Entered
***p < .000

are quite consistent with Lintner's model. The main reason behind this is that the companies follow stable dividend policy based on dividend per share rather than target pay-out ratio (as we have been mentioned earlier). However, as depreciation and amortisation recovery is quite insufficient to fulfil the investment demand, so, amortisation variable does not influence the dividend policy effectively. In addition to these, as we have already been mentioned that companies are mostly determined not to change the dividend policy very often, so, investment opportunities are not also affecting too much to change dividend policy. Therefore, the empirical results suggest that Darling's model does not work at all in the Dhaka Stock Exchange (Table 8.5).

8.3. C. III. Brittain's (1966) Dividend Behavioural Model

The overall F_{score} = 77.424 and 14.282 for cross-sectional and pooled regression models respectively and both the values are significant at 1% level (p<.000). However, the adjusted R^2 are 0.257 and 0.248 respectively for cross-sectional and pooled regression models.

The standardised beta coefficients of the cash flow and lagged dividend (LDPR) variables are .352 and .349, and -.551 and -.548 respectively for cross-section and pooled regression models. The coefficients of these variables are in the predicted direction and highly significant (p<.000). However, as cash flow incorporates depreciation as the source of funds with the regular profits, so, cash flow encourage the companies to change their dividend policy at a point of time even though they are not highly motivated to change the pay-out policy so often. Therefore, cash flow provides a better explanation of the ability of the companies to pay dividends. Finally, the empirical results suggest Brittain's partial adjustment dividend behavioural model as the best-fit model in the Dhaka Stock Exchange (Table 8.6).

8.3.C.IV. Fama and Babiak's (1968) Partial Adjustment Dividend Behaviour Model

The coefficients of the lagged profitability variable show the predicted signs in all the cases but significant in 39 cases. However, the coefficients of profitability variable

Table 8.5: Darling's Model Summary[a, b]

	Cross-sectional Regression Model					Pooled Regression Model				
Refined Constructs	Unstandar-dised Coeff-icients	Standardised Coefficients	Standard Error	T Value	T Significance	Unstandar-dised Coeff-icients	Standardised Coefficients	Standard Error	T Value	T Significance
Constant	1.1E-03		.002	.440	.660	1.2E-03		.005	.245	.807
PROFIT	7.1E-02	.180	.033	2.122	.034	6.5E-02	.165	.034	1.899	.058
LPROFIT	-4.0E-02	-.103	.033	-1.201	.231	-3.3E-02	-.086	.034	-.988	.324
AMORTIZE	-4.8E-02	-.062	.041	-1.166	.244	-4.7E-02	-.061	.041	-1.123	.262
GROWTH	-1.9E-03	-.028	.004	-.523	.601	-3.1E-03	-.046	.004	-.834	.405
F – ratio value	***1.569***					***F – ratio value***	***.832***			
R^2	***.017***					***R^2***	***.030***			
Adjusted R^2	***.006***					***Adjusted R^2***	***-.006***			
N	***51***					***N***	***503***			

Note: a. Dependent Variable: Changes in Dividend Payout Ratio (ΔDPR)
b. All Requested Variables Entered
***p < .000

Table 8.6: Brittain's Model Summary[a, b]

	Cross-sectional Regression Model					Pooled Regression Model				
Refined Constructs	Unstandar-dised Coeff-icients	Standardised Coefficients	Standard Error	T Value	T Significance	Unstandar-dised Coeff-icients	Standardised Coefficients	Standard Error	T Value	T Significance
Constant	5.1E-03		.002	3.077	.002	6.0E-03		.004	1.667	.096
CFLOW	.103	.352	.013	7.756	.000	.102	.349	.013	7.566	.000
LDPR	-.440	-.551	.036	-12.125	.000	-.438	-.548	.037	-11.924	.000
F – ratio value		***77.424******				***F – ratio value***		***14.282*****		
R^2		***.260***				R^2		***.267***		
Adjusted R^2		***.257***				***Adjusted*** R^2		***.248***		
N		***51***				***N***		***503***		

Note: a. Dependent Variable: Changes in Dividend Payout Ratio (ΔDPR)
b. All Requested Variables Entered
***p < .000.

have got the expected sign in 41 cases but significant in 20 cases only. The adjusted R^2 is more than 50% in 31 companies and more than 80% in 17 companies, which means the explanatory power of the independent variables are really very high. Moreover, F-statistics is significant in 36 cases that means that the partial adjustment model is statistically significant for most of the companies. The constant term is positive in 35 companies and among them 14 are statistically significant that implies that most of the companies are reluctant to cut dividends but rather they like to increase or maintain dividends (Tables 8.7).

The empirical result of the Fama and Babiak partial adjustment model is quite consistent among the companies. However, the coefficient of lag profitability is more significant than profitability. As we have mentioned earlier, the main reason is that the Dhaka Stock Exchange listed non-financial sector regular dividend paying companies basically follow stable dividend policy based on dividend per share (DPS) rather than target pay-out ratio. But current earnings encourage them to change the pay-out policy in every few years and they usually keep going with that for the next few years. So, the empirical findings clearly explain the practice of the companies under consideration, i.e., dividend change basically depend on the lagged dividends but profitability encourage the firms to change dividend policy, i.e., speed of adjustment work to take increasing or decreasing decision of the stable dividend policy but dividends are not perfectly adjusted with their levels of profitability.

However, the average company size of this sample is 391 million Taka whereas the average company size of the non-financial sector companies is almost 70 million Taka. Moreover, the institutional shareholdings for this sample is 12.44%, which is bit higher than the average market institutional ownership. And the insider ownership for this sample is 23.31%, which is bit lower than the average insider ownership of the non-financial sector companies but insiders are still the major shareholders of the regular dividend paying companies. So, presumably solely insider controlled firms have lower levels of outsider protection, which is the same as the empirical phase one. However, as we have

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
A	10	6.3E-03	.009	.704 (.508)	.266	.207	.435	.612 (.563)	-1.254	-.557	.760	-1.650 (.150)	.275	.456	2.517
B	10	4.2E-02	.012	3.598 (.009)	-3.3E-02	-.051	.116	-.286 (.783)	-1.746	-.891	.351	-4.968 (.002)	.718	.781	12.478***
C	10	2.3E-02	.013	1.774 (.126)	.223	.209	.203	1.096 (.315)	-1.746	-.808	.411	-4.248 (.005)	.741	.806	12.457***
D	10	3.1E-02	.017	1.814 (.112)	1.7E-02	.028	.148	.113 (.913)	-1.253	-.760	.414	-3.028 (.019)	.472	.589	5.020**
E	10	4.9E-03	.027	.184 (.859)	.454	.280	.384	1.184 (.275)	-1.093	-.757	.341	-3.202 (.015)	.501	.612	5.527**

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
F	10	4.8E-02	.005	8.977 (.000)	-.233	-.354	.057	-4.113 (.006)	-.838	-1.049	.069	-12.190 (.000)	.948	.961	74.334***
G	10	9.2E-02	.041	2.225 (.061)	-.126	-.086	.352	-.359 (.730)	-1.013	-.820	.295	-3.431 (.011)	.533	.637	6.146**
H	10	8.2E-04	.004	.183 (.860)	.483	1.033	.062	7.794 (.000)	-.805	-.941	.113	-7.096 (.000)	.887	.912	36.366***
I	10	3.0E-03	.007	.427 (.682)	.304	.234	.167	1.822 (.111)	-1.048	-.841	.160	-6.545 (.000)	.869	.898	30.826***
J	10	8.5E-04	.003	.335 (.751)	.250	.686	.070	3.557 (.016)	-.447	-.797	.108	-4.133 (.009)	.757	.826	11.880***

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
K	9	1.3E-02	.012	1.025 (.413)	5.0E-02	.182	.148	.341 (.766)	-1.169	-.853	.733	-1.596 (.252)	.187	.594	1.461
L	8	3.9E-02	.035	1.114 (.347)	-9.0E-02	-.213	.262	-.343 (.754)	-1.014	-.982	.640	-1.584 (.211)	.432	.659	2.899
M	10	6.8E-03	.013	.534 (.647)	.447	.152	1.117	.400 (.728)	-1.511	-.895	.642	-2.352 (.143)	.478	.739	2.830
N	10	6.6E-03	.007	.986 (.369)	.178	.270	.179	.991 (.367)	-3.523	-.722	1.329	-2.651 (.045)	.485	.632	4.292*
O	10	2.0E-02	.004	4.878 (.008)	5.7E-02	.059	.130	.434 (.687)	-2.012	-1.006	.272	-7.391 (.002)	.924	.949	37.358***

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
P	10	-1.8E-03	.011	-.163 (.878)	.998	1.254	.586	1.704 (.164)	-1.247	-1.415	.649	-1.923 (.127)	.221	.481	1.850
Q	10	-1.5E-03	.001	-1.073 (.319)	.638	.850	.095	6.754 (.000)	-.867	-.669	.163	-5.318 (.001)	.866	.896	30.036***
R	10	-1.7E-03	.003	-.622 (.557)	.628	1.034	.139	4.505 (.004)	-.785	-1.007	.179	-4.389 (.005)	.738	.803	12.256***
S	10	2.2E-02	.011	1.984 (.104)	8.8E-02	.574	.048	1.834 (.126)	-.904	-1.195	.237	-3.821 (.012)	.673	.766	8.198**
T	10	-5.3E-02	.078	-.678 (.520)	.894	.412	.544	1.644 (.144)	-.811	-.653	.311	-2.607 (.035)	.438	.563	4.505*

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
U	10	2.4E-04	.000	.508 (..633)	3.6E-02	.154	.089	.409 (.699)	-.437	-.555	.296	-1.476 (.200)	.154	.396	1.639
V	10	1.7E-02	.003	5.294 (.013)	-.242	-.491	.083	-2.893 (.063)	-1.087	-.664	.278	-3.910 (.030)	.876	.925	18.612**
W	10	9.2E-03	.003	3.478 (.025)	4.7E-02	.200	.051	.920 (.409)	-1.385	-.982	.307	-4.511 (.011)	.764	.843	10.704**
X	10	-2.9E-02	.026	-1.100 (.321)	.846	.856	.316	2.674 (.044)	-.821	-.759	.346	-2.374 (.064)	.480	.628	4.229*
Y	10	3.0E-02	.007	4.572 (.003)	.135	.301	.100	1.349 (.219)	-1.172	-1.195	.219	-5.348 (.001)	.877	.905	33.154***

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
Z	10	7.0E-03	.003	2.147 (.075)	-.143	-.060	.148	-.967 (.371)	-.823	-.969	.052	-15.702 (.000)	.973	.980	144.307***
AA	9	4.8E-03	.026	.187 (.869)	.721	.380	.484	1.489 (.275)	-.995	-.758	.335	-2.972 (.097)	.760	.880	7.341**
AB	8	9.4E-03	.024	.390 (.716)	.759	.481	.365	2.077 (.106)	-1.409	-.669	.487	-2.891 (.045)	.689	.792	7.637**
AC	6	4.7E-02	.012	3.731 (.065)	7.6E-02	.057	.139	.546 (.640)	-.938	-1.046	.093	-10.053 (.010)	.989	.994	179.454***
AD	10	4.8E-03	.005	.998 (.357)	.805	1.028	.118	6.831 (.000)	-.859	-1.027	.126	-6.829 (.000)	.878	.908	29.714***

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
AE	10	3.9E-03	.012	.324 (.755)	.318	.677	.119	2.669 (.032)	-1.066	-.949	.285	-3.740 (.007)	.584	.676	7.318**
AF	10	-1.7E-03	.003	-.521 (.625)	.228	.809	.090	2.525 (.053)	-.109	-.240	.146	-.748 (.488)	.388	.563	3.216
AG	10	-1.3E-03	.005	-.274 (.797)	.516	.585	.104	4.969 (.008)	-.619	-.651	.112	-5.531 (.005)	.922	.948	36.265***
AH	10	6.3E-02	.022	2.843 (.025)	-.321	-.375	.209	-1.538 (.168)	-.823	-.772	.260	-3.165 (.016)	.492	.605	5.359**
AI	10	3.9E-02	.029	1.329 (.276)	-.130	-.316	.190	-.687 (.541)	-.399	-.558	.329	-1.214 (.312)	-.045	.373	.891

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
AJ	9	5.9E-02	.066	.895 (.421)	-.536	-.277	.863	-.622 (.568)	-.217	-.349	.277	-.783 (.477)	-.142	.239	.627
AK	6	-2.1E-02	.064	-.331 (.772)	.950	.895	1.117	.850 (.485)	-.810	-1.030	.828	-.978 (.431)	-.351	.324	.480
AL	6	-4.2E-02	.009	-4.641 (.043)	.602	.801	.032	19.064 (.003)	-.466	-.367	.053	-8.734 (.013)	.994	.997	328.217***
AM	7	-2.2E-03	.002	-1.087 (.391)	.820	1.119	.041	19.884 (.003)	-1.626	-1.421	.064	-25.247 (.002)	.994	.997	322.132***
AN	10	1.0E-02	.010	1.083 (.358)	1.171	.818	.304	3.856 (.031)	-1.948	-1.220	.339	-5.749 (.010)	.862	.917	16.593**

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
AO	10	-1.1E-03	.008	-.134 (.898)	.235	.450	.184	1.278 (.249)	-.182	-.224	.285	-.637 (.548)	.075	.306	1.322
AP	10	-2.9E-02	.036	-.809 (.449)	.393	.450	.285	1.382 (.216)	-.319	-.352	.295	-1.083 (.320)	.197	.398	1.983
AQ	10	-3.3E-02	.062	-.532 (.614)	1.345	.374	1.227	1.096 (.315)	-1.272	-.935	.464	-2.741 (.034)	.435	.576	4.075*
AR	10	3.0E-02	.011	2.656 (.057)	-.105	-1.296	.041	-2.554 (.063)	-.876	-1.168	.381	-2.301 (.083)	.440	.627	3.356
AS	10	2.3E-02	.025	.916 (.390)	6.7E-02	.094	.219	.307 (.768)	-.560	-.616	.278	-2.017 (.084)	.187	.368	2.035

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
AT	10	9.1E-02	.032	2.858 (.029)	.131	.141	.218	.601 (.570)	-1.567	-.870	.423	-3.708 (.010)	.602	.701	7.042**
AU	10	-2.7E-04	.000	-1.885 (.310)	3.3E-03	1.073	.000	10.099 (.063)	-.281	-.224	.133	-2.109 (.282)	.973	.991	54.362*
AV	10	-4.7E-02	.021	-2.220 (.068)	1.248	.429	.156	8.014 (.000)	-.863	-.915	.050	-17.099 (.000)	.977	.983	171.968***
AW	10	5.4E-03	.010	.549 (.621)	.700	.778	.122	5.741 (.010)	-1.085	-.861	.171	-6.352 (.008)	.916	.950	28.341**
AX	9	4.6E-03	.004	1.059 (.338)	.362	1.279	.130	2.783 (.039)	-1.092	-1.574	.319	-3.424 (.008)	.583	.702	5.887**

Table 8.7: Regression Results of Fama and Babiak's Partial Adjustment Model: Testing Individual Companies (Cont....)

Company	N	CONSTANT			PROFIT				LDPR				Adj. R^2	R^2	F - Statistics
		Coefficient	Std. Error	T – Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value	Unstandardised Coefficient	Standardised Coefficient	Standard Error	T - Value			
AY	9	-9.1E-04	.030	-.030 (.977)	.814	.537	.355	2.292 (.070)	-1.351	-.790	.401	-3.371 (.020)	.632	.737	7.008**

Note: a. Dependent Variable: Changes in Dividend Payout Ratio (ΔDPR)
b. All Requested Variables Entered
***p < .000, **p < .005, and *p < .010
Brackets () contains the T-significance.

mentioned earlier that the regular dividend paying companies follow stable dividend policy based on the dividend per share, so, pay-out policy does not adjust properly with the level of profitability. Therefore, as regular dividend paying companies do not adjust payment policy with the level of earnings properly, so, the insiders have great opportunity to expropriate funds from insider controlled bigger sized firms efficiently and perfectly.

Finally, empirical results support Lintner's (1956) view that dividend policy is primarily governed by current earnings and lagged dividends but find Brittain's (1966) dividend behavioural model as the best-fit partial adjustment dividend behaviour model in an emerging market. However, the empirical studies identify cash flow as the better measure of the company's ability to pay dividends because cash flow boost the companies to change their dividend policy at a point even though they are not highly motivated to change the pay-out policy so often.

8.4. Conclusion

Dividend behaviour of the emerging markets are quite different from developed markets because of its differential characteristics. Several studies have been published on dividend behaviour in developed markets but very few studies have published on dividend policy and behaviour of emerging markets and none of the studies has been published on dividend behaviour of the Dhaka Stock Exchange yet. The major objective of this study is to identify the dividend policy and behaviour of an emerging market. Partial adjustment dividend behaviour models are tested on the Dhaka Stock Exchange listed non-financial sector companies over the period of 1988-1997 for the above purpose.

The empirical results support Lintner's (1956) view of partial adjustment model but find Brittain's (1966) dividend behavioural model as the best-fit partial adjustment dividend behaviour model in an emerging market. While the empirical results show a very high degree relationship between dividend change, current earnings, and lagged dividends, in practice dividend policy is primarily governed by lagged dividends because the regular dividend paying companies follow stable dividend policy and the pay-out policy does not

adjust perfectly with the level of current earnings. Moreover, as cash flow incorporates depreciation as the source of funds with the regular profits, so, cash flow boost the companies to change their dividend policy at a point in time even though they are not highly motivated to change the pay-out policy so often. However, the empirical studies also identify cash flow as the better measure of the company's ability to pay dividends.

In addition, the empirical results indicate some connection with the empirical phase one including the firm size and the ownership structure, which are major influential factors in an emerging market. Even though, the empirical results indicate that the regular dividend paying firms are comparatively bigger size firms of the Dhaka Stock Exchange but these firms are also solely controlled by insiders. So, solely insider controlled firms presumably have very lower level of outsider protection, which is the same as the empirical phase one. However, as we have mentioned earlier that the regular dividend paying companies follow stable dividend policy based on the dividend per share, so, the dividend policy does not reflect the level of earnings properly. Therefore, because of the company's choice of stable dividend policy, insiders enjoy a great many opportunities to expropriate funds in the Dhaka Stock Exchange.

Chapter Nine: Security Price Reaction to the Announcement of Dividend: Prior Theoretical and Empirical Evidence

9.0. Introduction:

A vast majority of the studies conducted in different countries indicate that announcements of dividend changes do convey information to the market (Pettit, 1972; Charest, 1978; Aharony and Swary, 1980; Woolridge, 1982; Asquith and Mullins, 1983; Brickley, 1983; Divecha and Morse, 1983; Woolridge, 1983; Benesh *et al.* 1984; Dielman and Oppenheimer, 1984; Eades *et al.* 1985; Wansley and Lane, 1987; Aharony *et al.* 1988; Born, 1988; Ghosh and Woolridge, 1988; Healey and Palepu, 1988; Ghosh and Woolridge, 1991; John and Lang, 1991; Marsh, 1993; and Abeyratna *et al.* 1996). However, the question *'what information is contained in dividend announcements?'* has not been fully resolved.

There are two schools of thought of dividend policy: one, dividend irrelevance and two, dividend relevance. Both of the thoughts have conflict with each other and none of them provides complete and satisfactory guidelines. However, both of the schools are trying to establish their thoughts, which led to dividend controversy. The major objectives of this chapter are twofold: *one*, to have a clear understanding about both of the schools of thought of dividend policy, and *two*, to develop research questions for an empirical investigation on security price reaction to the announcement of dividends in an emerging market.

The rest of this chapter is divided into three sections. Section 9.1 includes the prior theoretical and empirical evidences on dividend irrelevance. Prior theoretical and empirical evidence on dividend relevance and special reference to the security price reaction to the announcement of dividends are included in section 9.2. Finally, section 9.3 incorporates the general summary and concluding remarks.

9.1. Dividend Irrelevance:

Miller and Modigliani's (1961) seminal article on dividend policy suggests that the dividend policy of the firm, per se, is irrelevant to its valuation. Miller and Miodigliani (1966) and more recently Higgins (1974) conducted empirical tests, using samples of regulated and electric utilities that support the irrelevancy argument of

dividend policy for share valuation. Miller and Modigliani (1961) and Modigliani and Miller (1958) showed that in perfect capital markets with no information asymmetry the value of a firm is independent of financing decisions if the production-investment decision is given. Thus, the payment of cash dividends to equity holders is of no consequence to stockholder wealth or firm value.

Miller and Modigliani (M-M) (1961) provide the most comprehensive argument in support of the irrelevance of dividend. M-M maintained that dividend policy has no effect on the share prices of the firm is therefore, no consequences, i.e., whether dividend is paid or retained that does not make any difference. Under condition of perfect capital markets, rational investors, absence of tax discrimination between dividend income and capital gains, given the firm's investment policy, its dividend policy may have no influence on the market price of shares (Miller and Modigliani, 1966).

Miller and Modigliani (1961) point out that if the corporation does not let its dividend policy affect its investment decisions, and if we ignore taxes and transaction costs, a corporation's dividend policy should not affect the value of its shares at all. Their approach suggests, however, that the existence of differential taxes on income and capital gains should make the shares of corporations that pay low dividends more desirable, and thus that a corporation can increase the value of its shares by reducing its pay-out ratio.

There is an another argument, hinted by Miller and Modigliani, which suggests that dividend policy should not matter. They say (1961, p.431):

'If, for example, the frequency distribution of corporate pay-out ratios happened to correspond exactly with the distribution of investor preferences for pay-out ratios, then the existence of these preferences would clearly lead ultimately to a situation whose implications were different in no fundamental respect from the perfect market case. Each corporation would tend to attract to itself a 'clientele' consisting of those preferring its particular pay-out ratio, but one clientele would be

entirely as good as another in terms of the valuation it would imply for the firm.'

In a perfect capital market context, dividend policy is irrelevant as propositioned by Modigliani and Miller (1958). However, the conviction spread that real world tax laws cause the irrelevance proposition not to hold. Moreover, Miller (1977) suggests it may hold after all, tax or no tax.

9.2. Dividend Relevance:

The impact of dividend announcements on stock prices has received much attention in the finance literature. Most recently, Aharony and Swary (1980), Kwan (1981), Eades (1982), and Woolridge (1982), using dividend announcements made in isolation of other firm news reports, have found a significant positive association between dividend changes and announcement day stock returns.

Gordon (1962 and 1963) and Walter (1963) support the dividend relevance doctrine. They suggest that dividend policy and investment policy is inter-linked. Investment policy can't be separated from dividend policy and the choice of an appropriate dividend policy affects the value of the firm.

The leading proponents of the bird-in-the-hand theory (Gordon, 1962; and Lintner, 1962) view that stockholders value a dollar received in dividend more highly than dollar earnings retained. Therefore, dividend policy is relevant to the value of shares

Watts (1973) in an early empirical study of the information content of dividends examines the relation between unexpected dividend changes and future earnings, and abnormal stock returns for firms that announce unexpected dividend changes. He finds unexpected dividend changes provide little information about future earnings and there are no abnormal returns in months surrounding the dividend announcements. However, Gonedes (1978) reported the similar results and supports Watts's (1973) findings.

Bhattacharya (1979), Kalay (1980), and Miller and Rock (1982), each assuming that information asymmetries exist between managers and investors, have developed models of cash dividend signalling. In each model, security prices adjust to new equilibrium levels in response to the information managers convey to investors in their dividend decisions.

Still dividend news could, as M-M argued earlier, convey information about a firm's prospects and cause its stock's price to change. Direct evidence about the information content of dividend announcements is scant. Pettit (1972) suggested the content was important. Watts (1973) presented some evidence that little, if any, information content beyond that already reflected in contemporaneous earnings is present in dividends. However, Laub (1976) and Pettit (1976) challenged Watts's findings. In addition, Woolridge (1982) views that his empirical evidences indicate that abnormal stock returns vary in sign with unexpected dividends. The results are also consistent with the hypothesis that dividend contain information.

Miller and Modigliani (1961) introduced the idea that dividends could convey information about future profitability and that this could affect share prices. The extensive investigation of the share price effects of dividend announcements suggests that dividend payments do indeed convey information, and that the adverse effect of a dividend cut is relatively larger than the positive effect of a dividend increase (Griffin, 1976; Charest, 1978; and Aharony and Swary, 1980). Moreover, Partington (1989) hypothesised a cut in dividends would probably have an unfavourable effect on share price and the empirical results support his hypothesis.

The two recent models, one by Miller and Rock (1985) and the other by John and Williams (1985) attempt to explain dividend pay-out as rational optimisation behaviour from the viewpoint of both management and shareholders. The main assumption of these models is that there is asymmetry in information between inside management and outside shareholders. Asymmetric information leads to dividend announcement effects wherein stock price increases result from investors' realisation that insiders have superior information on the firm. However, Gerber (1988) finds clear evidence from executive interview that management is aware of the asymmetric information.

There has been considerable controversy concerning the effect of dividend yields on common stock returns. The controversy centres on whether or not the positive association between common stock returns and dividend yields reported in a number of empirical studies can be attributed entirely to information effects. Litzenberger and Ramaswamy (1982) show that there is a positive and non-linear relationship between common stock returns and expected dividend yield. The prediction rule for expected dividends is based solely on information that would have been available to the investor ex-ante. These results cannot, therefore, be attributed to the favourable or unfavourable information that would be present in a proxy for expected dividend yield that anticipates the occurrence of a dividend. Whether the effect of dividend yields on common stock returns can be attributed to information effects or is due to some omitted variables remains an open question. The conclusion is that these significant yield effects cannot be attributed to the information content in the prior knowledge that the firm will declare a dividend of unknown magnitude.

Miller and Scholes (1981) have argued that the observed relationship between common stock returns and dividend yields as attributed to the favourable information contained in the knowledge that a firm will actually declare any dividend. Dhillon and Johnson (1994) examine the stock and bond price reactions to dividend changes. The positive stock market response to dividend increases has several potential explanations, two of the more commonly discussed being information content and wealth redistribution between stockholders and bondholders. The evidence presented by Dhillon and Johnson (1994) support the wealth redistribution hypothesis but does not rule out the information content hypothesis. Typically, Dhillon and Johnson (1994) find that the bond price reaction to announcements of large dividend changes is opposite to the stock price reaction. Their result differs from those of Handjinicolaou and Kalay (1984) who analyse bond returns around dividend changes, and report that the bond prices are not affected by dividend increases but that bond prices react negatively to dividend reductions. Dhillon and Johnson (1994) argue that their data supports the information content hypothesis. In contrast, Jayaraman and Shastri (1988) find insignificantly negative bond price reactions to dividend announcements.

Bar-yosef and Sarig (1992) propose and examine a new approach to identify and measure dividend surprises. They find that the proposed measure detects dividend surprises even when dividends remain constant. They further find that the measure is insensitive to the extent to which the options used to measure dividend surprises are in-or-out-of-the-money. They examine the reaction between the proposed measure and the market's reaction to dividend announcements. Their result indicates that unexpected dividend payments bring about a statistically significant market reaction. It shows that dividends have an information content even for closely monitored large corporations. When dividend surprises are measured according to alternative approaches, i.e., relative to the Naive, the Lintner, and the Box-Jenkins models, or the value-line dividend expectations, the mean two-day abnormal stock return following dividend announcements is less strongly correlated with the dividend surprises. They compare the five methods in terms of their ability to measure dividend surprises. They use the market's reaction to dividend announcements to gauge the extent to which each announcement is unexpected. The results indicate that the suggested model of measuring dividend surprises is more highly correlated with the true surprises than with dividend surprises as measured by either the Box-Jenkins method or by other models employed by past studies or in relation to Value-Line dividend expectations.

Black and Scholes (1974) have found that a corporation that increases its dividend can expect that this will have no definite effect on its stock price. The price may change temporarily in response to a change in the dividend, because the market may believe that the change indicates something about the probable future course of earnings. If it becomes clear that the change was not made because of any change in estimated future earnings; this temporary effect should disappear. Thus a corporation may want to choose its dividend policy under the assumption that changes in dividend policy will have no permanent effect on its stock price.

In a recent article extending the work of Berle and Means (1932) on the separation of ownership from control, Jensen (1986) argues that a firm with substantial free cash flows will have a tendency to overinvest by accepting marginal investment projects with negative net present values. If managers are overinvesting, increases in the dividend will, all else being equal, reduce the extent of overinvestment and increase the market value of the firm, and a decrease in the dividend will have the

opposite result. Jensen (1986) views that empirical evidence of a positive association between dividend-change announcements and stock price movements as supporting the free cash flow hypothesis.

Modigliani and Miller (1958) recognised that dividend announcements could contain information about a firm's future earnings and cause revaluation of its securities. Whether or not dividend announcements contain information is an open empirical question. Pettit (1972 and 1976), Griffin (1976), Laub (1976), and Aharony and Swary (1980) interpreted their findings as evidence of information in dividends, while Watts (1973, 1976a, 1976b), Ang (1975), and Gonedes (1978) found no such evidence.

Denis (1990) examines the defensive payoffs announced in response to hostile corporate control activity. The evidence indicates that the announcement of defensive share repurchases is associated with an average negative impact on the share price of the target firm. In contrast, special dividend payments generally increase the wealth of target firm shareholders. Regardless of pay-out type, those firms remaining independent after the outcome of the corporate control contest experience an abnormal share price increase over the duration of the contest. Among these firms there are substantial post contest changes in capital, asset, and ownership structure and abnormally high rates of top management turnover. He investigated the use of defensive changes in corporate pay-out policy as a means of retaining the independence of a target firm during the course of a hostile control contest. The repurchases are often part of an overall defensive strategy undertaken by the target firm and are associated with a high rate of success in maintaining target firm independence. However, in the process of retaining this independence target firm shareholders suffer large abnormal losses. Furthermore, the result of many layout plans is the concentration of managerial control of voting rights without the simultaneous increase in managerial cash flow ownership. This evidence can be interpreted as consistent with managers using the defensive strategy for their own benefit at the expense of shareholders.

An exception to this general interpretation appears to be the use of special dividend plans. While also associated with a high rate of success in maintaining target

firm independence, these payoffs are typically associated with abnormal wealth increases for target firm shareholders. Cumulative abnormal returns for the entire control contest indicate substantial wealth gains for target firm shareholders even when a transfer to control is not effected. Thus, although the announced payoffs typically decrease shareholder wealth relative to the expected payment from the hostile bidder, they increase shareholder wealth relative to its pre-contest value. A possible explanation for this phenomenon is that the market expects value increasing changes in the target firm to occur in the future.

However, the empirical studies suggest that the current stock prices not only reflect historical information but also reflect all publicly available published information, e.g., annual reports, earnings announcements, company news, dividend announcements, equity issues, and merger and acquisition announcements (Fama *et al.* 1969; Pettit, 1972; and Fama, 1991).

Pettit (1972) views that in an efficient market current prices fully and without bias reflect all published, widely available information. This implies that the return expected from a security in one period is independent of all information available in the previous period since the security's price already reflects the effect of this information (see Samuelson, 1965; and Fama, 1970). Announcements of changes in dividends would be immediately and unbiasedly reflected in the security's price resulting in a one time actual return that exceeds (if a dividend increase) or falls short of (if a dividend decrease) the expected security return. In this kind of a market, no trader, relying on publicly available information, can consistently make a return that exceeds the equilibrium risk adjusted return. However, a market that is inefficient would be characterised by firms with abnormal returns that tend to exist over a period of time after the announcement; implying either that it takes considerable time for the information to be disseminated across the market, or that there is a tendency to either systemically understate or overstate the effects of such information on the price of the security.

Abnormal security performance prior to an announcement may but does not necessarily imply that the market is inefficient. The market would be considered to be inefficient if this apparent anticipation effect was the result of purchases or sales by

investors who have access to relevant information that has, for some reason, been withheld from the rest of the market, or the unique ability of some investors to use publicly available information to predict more accurately announcements that are related to or correlated with the favourable or unfavourable news conveyed by a dividend announcement.

9.2.1. Security Price Reaction to Dividend Initiation and Omission:

Previous studies have shown that positive (negative) dividend change announcements produce positive (negative) common stock price changes. Michaely *et al.* (1995) investigate both the immediate reaction to initiation or omission of dividends and the long term post announcement price performance and their findings are quite consistent with prior empirical evidence (e.g., Healey and Palepu, 1988 and Asquith and Mullins, 1983) that dividend omission leads to price drop and price increase as a result of dividend initiation.

Asquith and Mullins (1983) re-examine the stock price reaction to dividend announcements, using daily stock price data to control for other contemporaneous information announcements. Their results show significant positive abnormal returns at dividend initiation announcements, other studies including Aharony and Swary (1980), Brickley (1983), Kalay and Lowenstein (1985), and Dielman and Oppenheimer (1984), also document abnormal returns at the announcement of unanticipated dividend increases and decreases.

Healey and Palepu's (1988) empirical result indicate that firms that initiate and omit dividends have significant increases and decreases in their annual earnings for at least one year before and year of dividend policy change. These findings are consistent with Lintner (1956), Fama and Babiak (1968), and Watts (1973) and suggest that dividend initiation and omissions can, in part, be predicted by changes in past and current earnings. However, there is a significant market reaction to the announcement of these dividend policy changes, indicating that they can not be perfectly predicted and that they convey new information.

In another study Aharony and Swary (1980) indicate that dividend increases lead to increases in stock prices. Lee (1995) investigates the response to stock prices to

dividend shocks in a bivariate model of stock prices and price-dividend spreads. The dividend generating process is modelled as the sum of a permanent component and a temporary component. By using the stock price valuation (present value) model, the two components are related to stock prices. The stock market responds significantly not only to permanent shocks to dividends, but also to temporary shocks to dividends. Furthermore, initial responses of stock prices to the temporary shocks are as strong as those to the permanent shocks. As a result, substantial variation in stock prices is due to the temporary shocks. This finding provides empirical support for the imperfect information hypothesis that emphasises the failure of investors to clearly distinguish between the two components of dividends, and also suggests that the observed mean-reverting behaviour of stock returns should be explained by incorporating a significant temporary component into stock prices. The price-dividend spreads are primarily accounted for by the temporary shocks to dividends, and respond strongly to them, suggesting that, in response to the temporary shocks to dividends, stock prices respond excessively relating to dividends.

Black and Scholes (1974) concluded that it is not possible to demonstrate that the expected returns of high yield stocks differ from the expected returns on low yield stocks either before or after taxes. In spite of the ambiguous implication for the after tax CAPM, Black and Scholes (1974) have frequently been cited as providing evidence against the existence of tax effects.

Various authors' report that dividend reductions are associated with large share price declines (Charest, 1978; and Woolridge and Ghosh 1985). On the other hand, many studies document that dividend increases are associated with share prices increases (Charest, 1978; Aharony and Swary, 1980; and Lang and Litzenberger 1989).

Traditionally, it has been argued that a corporation can influence the price of its shares by changing its dividend policy. The most common argument is that the corporation can increase the value of its shares by increasing its pay-out ratio. The feeling is that investors prefer dividends to capital gains because *'a bird in the hand is worth more than one in the bush'*. Therefore, investors will bid up the prices of the common stock of companies that pay generous dividends, relative to similar

companies that pay smaller dividends. However, Graham and Dodd (1934) are perhaps the best known proponents of this point of view.

Jayaraman and Shastri (1988) find insignificantly negative bond price reactions to dividend announcements. Michaely *et al.* (1995) investigates the immediate and long-term effects of dividend initiation and omission announcements. They find that the short-term price impact of dividend omissions is negative and dividend initiation is positive. Initiation reactions are about one-half the magnitude of the market reaction to omission announcements. The change in yield, however, is seven times higher for the omission announcements. They also show that the market reaction to a dividend omission announcement is not greater than to an initiation for a given change in yield. They find the significant long-term drift following announcements of initiations and especially omissions. These drifts are surprising for several reasons. *First*, from the efficient market perspective, predictable excess returns are always surprising. In the case of omissions, where the drifts is large and robust. They show that the combined initiating and omitting firms' drifts result in abnormal profits. *Second*, firms that omit a dividend are prior losers, not unlike those studies by De Bondt and Thaler (1985 and 1987) who find significantly positive excess returns. *Third*, while the negative drift resembles that found by Bernard and Thomas (1989 and 1990) and other who have investigated post earnings announcement drift; this is not the same phenomenon. The drift here is more pronounced, lasts longer, and does not appear to occur primarily around subsequent earnings announcements. *Fourth*, they can find no evidence of important changes in volume or clientele, which mitigates price pressure as a potential explanation for the announcement drift. It is apparent that the immediate and the long-term reaction to omission announcements is greater (in absolute value) than to initiation announcements. But Michaely *et al.* (1995) is unable to explain (at least partially) the asymmetry in the short-term reaction by the difference in the magnitude of the yield changes between these two types of events. They can explain for the long-term difference in price behaviour between initiations and omissions. Neither the intensity of news (i.e., the change in yield) nor the stock's liquidity can explain the larger drift observed for omissions. *Finally*, they showed that those firms substituting stock dividends for cash dividends experience a worse than non-stock-dividend-paying firms in the long-run.

Signalling and agency cost theories of dividend policy predict the omissions will produce a large average decline in equity values than will reductions of less than 100%. However, Christie and Nanda (1994) identify a U-shaped relation between announcement day risk adjusted excess returns and the percentage decline in dividends. The significantly smaller than expected price reaction to dividend omissions can't be traced to growth opportunities, nor to a tendency for firms to delay omission announcements. While omitting firms provide higher per share dividend action than do firms that severely reduce payments, further dividends are unrelated to the market response.

Several studies have analysed the responses of share prices and bond prices to the announcements of specific modes of cash distribution by firms, and the following stylised facts have been noted:

- Both dividends and stock repurchases have significant announcement effect. When a firm announces a stock repurchase or a dividend increase, its stock price increases (Aharony and Swary, 1980; Asquith and Mullins, 1983; Dann, 1981; Handjinicolaou and Kalay, 1984; Stewart, 1976; and Vermaelen 1981). More direct evidence - using a more discriminating empirical methodology - that changes in dividend policy convey information has recently been provided by Ofer and Siegel (1986).
- On average, a stock repurchase provokes a significantly higher stock price response than a dividend increase (Aharony and Swary, 1980; Dann, 1981; Jensen and Smith, 1985; Masulis, 1980b; and Vermaelen, 1981).
- Firms that repurchase stock offer premia above the pre-repurchase market prices for their own stock (Vermaelen 1981 and 1984).
- In many cases, despite the increase in the price per share subsequent to the announcement of the repurchase, the stock price drops in the "aftermarket", i.e., after the execution of the repurchase (Vermaelen, 1981).
- Despite the post-repurchase price decline, a price increase subsequent to the repurchase announcement is relatively permanent in the sense that the price in the "aftermarket" remains higher than the price prior to the repurchase announcement (Vermaelen, 1981).

There is, surely, much evidence that market treats changes in dividends as newsworthy. When dividends are increased or initiated, prices tend to go up, and when dividends are cut or omitted, prices fall.

9.2.2. Security Price Reaction to the Contemporaneous and Joint Announcements

A major difficulty in assessing dividend information content lies in the fact that dividend and earnings announcements often are closely synchronised. Thus, one has first to adequately identify information reflected in both earnings and dividends and then consider the reminder of the information conveyed by dividend announcements.

Stock price reaction to joint announcements is significantly greater than the reaction to just one signal. Some evidence shows that the reaction to a joint announcement is approximately twice that to a contemporaneous announcement.

Miller and Rock (1985) show theoretically that under certain conditions dividend and earnings announcements can serve as perfect substitutes for each other. Watts (1973) empirically argues that the information content of dividend beyond earnings is trivial. In contrast, studies such as Pettit (1972), Aharony and Swary (1980), Kane *et al.* (1984), and Venkatesh and Chaing (1986) suggest that dividend and earnings announcements are not perfect substitutes.

If announcements are not perfect substitutes, the stock price reaction to a joint announcement of two consistent news series should be greater, on average, than the stock price reaction to a single announcement. Alternatively, if announcements are perfect substitute, the stock price reactions should not differ between the two types of announcements.

The positive association between announcements of dividend changes and stock price movements has been documented in several empirical studies. Fama *et al.* (1969) find that firms announcing stock splits accompanied by increases in cash dividends have a statistically significant, positive mean, risk adjusted stock return during the announcement months, and those accompanies by dividend decreases have a significant negative return. Studies by Pettit (1972) and others find that the mean risk adjusted return for firms announcing dividend increases is significantly positive over

the two days surrounding the announcement, and for those announcing dividend decreases the two-days return is significantly negative. More recently, Aharony and Swary (1980) report similar results after controlling for contemporaneous quarterly earnings reports.

A major difficulty in assessing the information content of dividend announcements lies in the inability of researchers to isolate the possible dividend effects from the effects of other, often closely synchronised, announcements.

The leading explanation for the positive announcement effects surrounding stock repurchase announcements is the information-signalling hypothesis. Major studies, by Dann (1981), Masulis (1980b), Rosenfeld (1982), and Vermaelen (1981 and 1984), find consistent evidence of positive market returns on announcement dates of stock repurchase tender offers. Because alternative explanations (i.e., tax savings, leverage, and expropriation hypotheses) were found to be only marginally important, the repurchase event is commonly viewed as a signal of favourable earnings prospects.

Similarly, several studies document announcement effects accompanying large dividend changes. Based on a substantial body of evidence, the best explanation for the market's reaction to dividend announcements is also the information-signalling hypothesis, wherein the firm conveys favourable information on its prospects to the market via dividend increases. Conversely, announcements of equity issues appear to signal unfavourable information about the economic opportunities facing issuing firms. The market's reaction to both primary and secondary distributions of shares is negative. These studies support the notion that firms attempt to communicate their prospects to the market via corporate transactions involving cash inflows (equity issues) or cash outflows (dividends and repurchases). The signalling theory thus argues that management has private information, which is superior to that available to shareholders in the market.

In the absence of information asymmetries between management and capital markets theory predicts that firms should not simultaneously pay dividends and issue new stock. If stock issues are costly the rational value maximising firms should avoid incremental issue costs associated with financing dividends. However, there is

evidence that dividend increases lead to stock price appreciation and dividend decreases to stock price decline (Charest, 1978; and Aharony and Swary, 1980). These provide managers with the opportunity to benefit their shareholders. Managers could time a stock offering after a stock price increasing dividend announcement. Some practitioners recommend, managers could deliberately increase dividends before initial public offerings (Miller 1987) and seasonal offerings.

Loderer and Mauer (1992) examine whether managers do indeed rely on dividends to obtain higher prices in primary stock offerings and weather the market's reaction to dividend and stock offering announcements justifies such a policy. Korajczyk *et al.* (1989) attempt to assess the effect of regular information releases on the pricing and timing of equity issues. They suggest that firms time equity issues after regular information releases to reduce valuation uncertainty. This then leads to the prediction that the price decline on issue announcements is more severe the longer the time since the last information release.

John and Williams (1985) formulated an empirical model for the relation between dividend and stock offering. They provide a rationale for why firms raise outside equity while paying dividends. Dividends are used to signal firm value, which results in shareholders obtaining a higher price when selling their shares. The analysis implies that issuing firms (except the lower value firms) declare dividends before the offering. They predict that the joint announcement effect of stock offering and immediately preceding dividend is positive if dividends are increased and negative if dividends are decreased.

Stock offering announcements could depress stock prices simply because of finite price elasticity of demand for firm's securities (Barclay and Litzenberger, 1988; and Loderer *et al.* (1991). Alternatively, Healy and Palepu (1990) argue that dividends could signal expected earnings whereas stock issues could signal changes in risk. In either case, firms may not have much to gain from the timing of the announcement of stock issues immediately after dividend declarations. On the other hand, Jain (1989) suggests that changes in system risk be unrelated to offer announcement effects.

9.2.3. Size and Dividend Announcement:

Eddy and Seifert (1988) find that the abnormal stock price reaction to a dividend increase is greater for small firms. Zeghal (1983) extends the work of Klein and Bawa (1977), pointing out that there should be a negative relationship between size and availability of information. Zeghal (1983) supports his basic premise with empirical work that shows that the information of financial statements is greater for small firms than for large firms. Similarly, the information content of a dividend change may be greater for small firms.

In a well-functioning market, on average, there should be no surprise in dividend announcement. Absent microstructure effects, market efficiency dictates that the excess returns to all dividend announcements, taken, together be zero. However, Kalay and Loewenstein (1985) find that during a three-day period surrounding dividend announcements, the actual returns, on average, significantly exceed both the returns predicted by the markets model and the average daily returns realised over a recent period. They also find that the market reactions to dividend announcement is sluggish, i.e., the excess return persist for up to four trading days after the announcement date. In a subsequent study, Eades *et al.* (1985), find that for the sub-sample of dividend announcements that are separated sufficiently from ex-dividend dates, there is no evidence of sluggishness. They also confirm that the market reaction to dividend announcement is biased. Bajaj and Vijh (1995) find that the average excess return to all dividend announcements increases as the firm size and stock price decrease. On the basis of 67,592 dividend announcements including 336 dividend omission announcements of the NYSE-listed firms over the period of July 1962 to June 1987, they find a 0.21% average excess return over the three day announcement period. For the lowest decile of firm size (stock price), the average excess return is 0.67(0.16)% while the corresponding average for the highest decile of firm size (stock price) is 0.07(0.05)%.

Bajaj and Vijh's (1995) findings on the firm size and stock price effects suggest that the observed price reactions may be due to micro-structure based reasons. Market micro-structure can effect stock prices during dividend announcement periods for two reasons:- (a) spill-over of tax-related trading around ex-dividend days, and (b) trading behaviour related to the dissemination of dividend information.

9.3.3.A. Tax -related trading and market prices around dividend announcement:

Using transaction data, they (Bajaj and Vijh, 1995) examine trade and quote prices to study microstructure effects during dividend announcements. *Firstly*, they investigate whether the observed returns are biased upward due to the bid-ask spread. Such a bias may arise if the closing price before an announcement is more likely to be a bid price or the closing price after an announcement is more likely to be an ask price. The results of them find no such evidence. *Secondly*, they look for evidence of price pressure due to concentration of buy orders after dividend announcements. Even though the total trading volume increase significantly, the relative numbers of buy and sell orders after an announcement are similar to those on an unaffected day. Their findings that there is increased trading volume but no "buying pressure" during a dividend announcement period suggests that the increased trading activity may be related to information production rather than tax arbitrage.

9.3.3.B. Information production and stock prices during dividend announcements:

Kim and Verrecchia (1991a, 1991b, and 1992) provide theoretical analysis of private information production and trading behaviour around anticipated events. They suggest that anticipation of a public announcement stimulate private information production even if information production is costly. Traders acquire private information to gain comparative advantage in interpreting the subsequent public information. Upon the release of public information, there is increased trading volume as traders revise their private (prior) beliefs. Kim and Verrecchia's models predict an increase in both the trading volume and price volatility during the announcement period. They predict that the expected increase in trading volume and price volatility are increasing functions of the precision of the announced information and decreasing functions of the amount of pre-announcement public and private information.

To examine whether the observed excess returns are related to information production they (Kim and Verrecchia) first examine the changes in price volatility during the announcement days. However, Bajaj and Vijh (1995) findings are consistent with the findings of Kalay and Loewenstein (1985). On average, the volatility is higher during announcement days. They also find that there is a significant increase in trading volume during announcement days. The evidence on excess volume accompanying

dividend announcement reinforces the impression of information-related trading. Trading volume due to liquidity, and tax-arbitrage, reasons should decrease during periods of greater volatility.

The prediction rule for expected dividends is based solely on information that would have been available to the investor ex-ante. These results can not, therefore, be attributed to the favourable or unfavourable information that would be present in a proxy for expected dividend yield that anticipates the occurrence of a dividend.

9.2.4. Ex-dividend Day Effect of Dividends:

There are a large number of studies which have examined the security pricing behaviour on ex-dividend days, e.g., Campbell Beranek (1955), Elton and Gruber (1970), Black and Scholes (1973), Kalay (1982b), Eades *et al.* (1984), Booth and Johnston (1984), Kaplains (1986), Lakonishok and Vermaelen (1983 and 1986), Grammatikos (1989), Koski (1990), Michaely (1991), Karpoff and Walkling (1988 and 1990), Choe and Masulis (1991), Robin (1991), Stickel (1991), Michaely and Vila (1995 and 1996), and Boyd and Jagannathan (1992), documented an ex-dividend day stock price drop which is less than the dividend per share and positively correlated with the corresponding dividend yield. However, past studies also indicate that ex-dividend day returns vary over time. The variability of price depends on dividend yield but they are unable to explain the variation with changes in the tax code but find the strong effect for the introduction of negotiated commissions. Litzenberger and Ramaswamy (1979 and 1980) and Eades *et al.* (1984) present results that suggest variation over time. Ex-dividend day returns of high yielding stocks are persistently positive for some period and negative for other periods. On the other hand, low yielding stocks are constantly positive and less variable. Eades *et al.* (1994) views those corporate dividend policies affect ex-dividend day returns and they confirm the findings of Gordon and Bradford (1980) that the price effect of dividends is counter-cyclical. The counter-cyclical nature of interest rates is implied by the results of Fama and Schwert (1977) and has also been documented by Litterman and Weiss (1985) and Lee (1992). However, Elton and Gruber (1970) argue that the higher taxation of dividends relative to corporate gains results in a price drop on ex-dividend days being smaller than the amount of dividends paid.

9.3. Conclusion:

Several studies conducted on information signalling evidence that dividend convey information to the market and that reflect in the share price. Two schools of thought have established: one, dividend irrelevance, and two, dividend relevance, and both the schools are trying to establish their thoughts, which led to dividend controversy. Miller and Modigliani (1961) maintained that dividend policy has no effect on the share prices of the firm is therefore, no consequence, i.e., whether dividend is paid or retained that does not make any difference. However, the impact of dividend announcements on stock prices has received much attention in the finance literature. Gordon (1962 and 1963) and Walter (1963) support dividend relevance doctrine. They view regarding the dividend relevance doctrine that dividend policy is relevant to the value of the share. Moreover, *'do dividend convey any information to the market?'* is still remaining unresolved and left as the key research question for the further studies.

The important research questions arise through the review of previous empirical studies on dividend relevance and irrelevance are:

(1) does security price react to the announcement of dividends or not, and

(2) if it does, then does the security price of the emerging markets react to the announcement of dividends the same way as the developed markets?

Chapter Ten: Security Price Reaction to the Announcement of Dividends in an Emerging Market: An Empirical Investigation

10.0. Introduction

Numerous studies conducted in different countries have documented that announcement of changes in dividends and earnings conveys specific information to the market (Pettit, 1972; Charest, 1978; Aharony and Swary, 1980; Woolridge, 1982 and 1983; Asquith and Mullins, 1983; Brickley, 1983; Divecha and Morse, 1983; Benesh *et al.* 1984; Dielman and Oppenheimer, 1984; Eades *et al.* 1985; Wansley and Lane, 1987; Aharony *et al.* 1988; Born, 1988; Ghosh and Woolridge, 1988; Healey and Palepu, 1988; Ghosh and Woolridge, 1991; John and Lang, 1991; Marsh, 1993; and Abeyratna *et al.* 1996). However, recent studies which have examined simultaneous announcements by firms have discovered that the signal of dividend and earnings may either corroborate or contradict the other or, in consequence, influence the level of any abnormal returns which are earned by investors (Kane *et al.* 1984; Easton, 1991; Eddy and Seifert, 1992). Moreover, previous empirical studies suggest that positive (negative) dividend change announcements produce positive (negative) common stock price (Asquith and Mullions, 1983; Healey and Palepu, 1988; and Michaely *et al.* 1995).

As a member of an emerging market the stock price reaction of the Dhaka Stock Exchange listed companies to the announcement of dividends is likely to be different from developed markets because the characteristics of the emerging markets are quite different. That is why, we see that the security price behaviour of the Dhaka Stock Exchange listed companies appear differently from developed markets what might be expected from reading the literatures derived from developed markets.

This chapter investigates the security price reaction to the announcement of dividends of the Dhaka Stock Exchange listed companies to identify whether security price reacts to the announcement of dividends or/and dividend announcement works as a signalling device in an emerging markets. Event study methodology is employed for this study and the results suggest that security prices decrease after the announcement of dividends in the Dhaka Stock Exchange. This behaviour of stock price is irrespective of the nature of announcements (i.e., good news, bad news, or no news).

However, it is also observed a negative relationship between the returns of observation and comparison period in all the cases. These results also support the same argument. In addition, t-statistics is not highly significant either of the case which indicate the ineffectiveness of dividend announcements to influence the security prices. These results, therefore, suggest that security price does not react to the announcement of dividends in an emerging market. Finally, the empirical results also suggest that emerging markets are inefficient.

The rest of the chapter is divided into four sections. The reviews of all the major theoretical and empirical evidence along with critical evaluation for identifying the security price reaction to the announcement of dividends are included in section 10.1. Section 10.2 contains the description of data and methodology of the empirical analysis. The empirical results are reported in section 10.3. Finally, the summary and the concluding remarks are incorporated in section 10.4.

10.1. Theoretical Background

The bird-in-the-hand fallacy claims that stockholders are indifferent to dividend payments and retention; therefore, dividend policy is relevant to the value of shares. The leading proponents of the bird-in-the-hand theory (Gordon, 1962; and Lintner, 1962) view that stockholders value a dollar received in dividend more highly than a dollar earnings retained. Moreover, Gordon (1963) and Walter (1963) also support the dividend relevance doctrine.

Miller and Modigliani (M-M) (1961) provide the most comprehensive argument in support of the irrelevance of dividend. M-M maintained that dividend policy has no effect on the share prices of the firm is therefore, no consequences, i.e., whether dividend is paid or retained that does not make any difference. Under condition of perfect capital markets, rational investors, absence of tax discrimination between dividend income and capital gains, given the firm's investment policy, its dividend policy may have no influence on the market price of shares (Miller and Modigliani, 1966).

However, Michaely *et al.* (1995) investigate both the immediate reaction to initiation or omission of dividends and the long term post announcement price

performance and their findings are quite consistent with prior empirical evidence (e.g., Asquith and Mullins, 1983; and Healey and Palepu, 1988) that dividend omission leads to price drop and price increase as a result of dividend initiation.

On average, in a well-functioning market, there should be no surprise in dividend announcement. Absent microstructure effects and market efficiency dictates that the excess returns to all dividend announcements taken together are zero. However, Kalay and Loewenstein (1985) find that during a three-day period surrounding dividend announcements, the actual returns, on average, significantly exceed both the returns predicted by the markets model and the average daily returns realised over a recent period. Moreover, they mention that the market reactions to dividend announcement is sluggish, i.e., the excess returns persist for up to four trading days after the announcement date. In a subsequent study, Eades *et al.* (1985), find that for the sub-sample of dividend announcements that are separated sufficiently from ex-dividend dates, there is no evidence of sluggishness. However, they confirm that the market reaction to dividend announcement is biased.

Bajaj and Vijh (1995) find that the average excess return to all dividend announcements increases as the firm size and stock price decrease. Their findings on the firm size and stock price effects suggest that the observed price reactions may be due to microstructure based reasons. Market microstructure can effect stock prices during dividend announcement periods for two reasons: spill-over of tax-related trading around ex-dividend days and trading behaviour related to the dissemination of dividend information.

The summary of the major empirical studies on the security price reaction to the announcement of dividends along with the data set they used, research methodology, and their remarkable findings are presented in the Table 10.1.

While there are a number of studies conducted on security prices, a very few studies have been conducted on security price reaction to the announcement of dividends. However, all of those studies are on US markets except one, which is on UK market. Although, all of those studies employed event study methodology, the researchers applied a variety of approaches and considered different event study

Table 10.1: Summary of the Major Empirical Studies on Security Price Reaction to the Announcement of Dividend:

Author(s)	Data Set	Method Used	Findings Regarding Security Price Reaction
1. Aharony and Swary, 1980	384 dividend increasing, 47 dividend decreasing, and 2968 dividend maintained announcements for NYSE listed 149 industrial firms for the period of 1/1/1963 – 31/12/1976.	(1)Measurement of Abnormal Performance, and (2) Cumulative Effects of Abnormal Returns Approach of the event study methodology for the period of ±10 days.	(1) Dividend increasing announcements: stock price increases (2) Dividend decreasing announcement: stock price decreases (3) Dividend maintained announcements: no change in stock prices.
2. Asquith and Mullins, 1983	All dividend initiation announcements of 168 NYSE listed firms for the period of 1954-1963.	(1) T-Test Approach of average excess return, and (2) Regression Approach of the event study methodology for the period of ±10 days.	Dividend initiation announcements: stock price increases and in general increases shareholders wealth.
3. Woolridge, 1983	317 dividend increasing announcement, and 50 dividend decreasing announcements of NYSE listed 225 firms for the period of 1970-1977.	Comparison Period Return Approach of the event study methodology for the period of ±10 days.	(1) Dividend increasing announcements: stock price increases (2) Dividend decreasing announcement: stock price decreases.
4. Fehrs *et al.* 1988	1015 dividend increasing, and 65 dividend decreasing announcements of US firms for the period of 1/1/1980 – 31/12/1984.	(1)Measurement of Abnormal Performance, and (2) Cumulative Effects of Abnormal Returns Approach of the event study methodology for the period of ±5 days.	(1) Dividend increasing announcements: stock price increases (2) Dividend decreasing announcement: stock price decreases.
5. Woolridge and Ghosh, 1988	408 announcements of dividend cut of NYSE listed 12 firms for the period of 1971-1982.	Comparison Period Return Approach of the event study methodology for the period of ±1 Quarter.	Dividend cuts announcement: stock price falls.

Table 10.1: Summary of the Major Empirical Studies on Security Price Reaction to the Announcement of Dividend: Cont..

Author(s)	Data Set	Method Used	Findings Regarding Security Price Reaction
6. Eddy and Seifert, 1992	Contemporaneous and non-contemporaneous dividend announcements of 1111 US firm for the period of 1983-1985.	(1) Mean Adjusted Return Approach, and (2) Regression Approach of the event study methodology for the period of -3 days and +1 day.	(1) Price reaction to the joint announcement is significantly greater than just one single announcement (2) Price reaction to the announcement of joint announcement is approximately twice that to a non-contemporaneous announcement (3) Price reaction to joint contradictory announcement is not significant.
7. Dhillon and Johnson, 1994	61 dividend increasing, and 70 dividend decreasing announcements of NYSE listed firms for the period of 1/1/1978 – 31/12/1987.	Mean Adjusted Return Approach of the event study methodology for the period of ±10 days.	(1) Dividend increasing announcements: stock price increases (2) Dividend decreasing announcement: stock price decreases.
8. Michaely *et al.* 1995	561 cash dividend initiations and 887 cash dividend omissions announcement of NYSE listed firms for the period of 1964-1988.	Buy-and-hold strategy of the event study methodology for the period of ±1 day.	(1) Dividend initiation announcements: stock price increases (2) Dividend omission announcement: short-term price impact is negative.
9. Abeyratna *et al.* 1997	Dividend increase, decrease, and maintained announcements of 617 UK firms for the period of 1/1/1991 – 30/6/1991.	Measurement of Abnormal Performance (T-Test) Approach of the event study methodology for the period of ±1 day.	(1) Dividend increasing announcements: stock price increases (2) Dividend decreasing announcement: stock price decreases.
10. Impson, 1997	660 dividend decrease announcement of US unregulated firms for the period of 1974 – 1993, and 65 dividend decrease announcements of US public utility firms for the period of 1974 – 1993.	Regression Approach of the event study methodology for the period of ±1 day.	Dividend decrease by public utilities prompt stronger negative market reactions than similar announcements by unregulated firms.

periods to analyse the data. The empirical results of all the studies support that positive dividend change announcements produce positive common stock prices and vice versa.

The empirical part of this chapter investigates the security price reaction to the announcement of dividends in an emerging market. The dividend announcements divides into three categories: good news (announcement of dividend increase), bad news (announcement of dividend decrease) and no news (dividend maintaining announcements). An event study methodology is used considering four event periods (60, 30, 20, and 10 days before and after the announcement of dividends) to compare the mean abnormal returns between observed period (before the announcement) and comparison period (after the announcement) and to examine whether the announcement of dividends make abnormal returns after the announcements of dividends or not.

10.2. Data and Method

This section of the chapter employs a conventional event study methodology to examine the stock price reaction to the announcement of dividends. It is defined the announcement day as the event day (Day = 0), which is the day before the day on which dividend announcement news are published in the daily newspapers or in the daily stock price quotation. It is considered -60 days, -30 days, -20 days, and -10 days of the event day as the observation period and +60 days, +30 days, +20 days, and +10 days of the event day as the comparison period for the study.

A part of the market data (1988-1991) is collected from the Dhaka Stock Exchange price quotations, published and unpublished records of the Dhaka Stock Exchange, and the Dhaka Stock Exchange computer database. The rest of the market data (1992-1997) is collected from the data channel (Datastream). However, the announcement dates are obtained from the Dhaka Stock Exchange daily price quotations for this study.

Daily share price returns are estimated according to the following equation[13]:

$$R_{it} = (P_{it} - P_{it-1}) / P_{it-1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

[13] Dividends are not included to estimate the stock returns.

Where,

R_{it} = Share price return on day 't'

P_{it} = Share price on day 't' and

P_{it-1} = Share price on day 't-1'

Abnormal returns are calculated according to the following equation:

$$AR_{it} = R_{it} - E(R_{it}) \quad \text{.....(2)}$$

Where,

AR_{it} = Abnormal return on day 't' and

$E(R_{it})$ = Expected return on day 't'

The expected return is derived using the well-known market model and based on the previous 300 days of the event study period.

The expected return is:

$$E(R_{it}) = \hat{\alpha} + \hat{\beta} R_{mt} \quad \text{.....(3)}$$

Where,

$\hat{\alpha}$ *and* $\hat{\beta}$ = Pr*edicted values of cons*tan*t term and beta coefficient, and* R_{mt} = Market return on day 't' {(Price Index$_t$ – Price Index$_{t-1}$) / Price Index$_{t-1}$}

As it is known that Index comprises both frequently and infrequently traded shares. However, it is also known that frequently traded shares cause upward bias and infrequently traded shares cause downward bias. Scholes and Williams (1977) and Dimson (1979) explained the problem of infrequent trading bias in the financial markets and also mentioned the problem of using OLS model. They suggested to consider lag and lead factor for adjusting upward and downward bias. On the other hand, Bartholdy and Allan (1994) considered Scholes and Williams (1977) and Dimson's (1979) suggested lag and lead factors alongside OLS model but they found

more stability of the coefficients in case of using OLS model. Therefore, using market model for predicting constant term (α hat) and beta coefficient (β hat) is quite justified for this study.

All the cash dividend announcements of the Dhaka Stock Exchange listed 153 non-financial companies over the period of 01-01-1988 to 31-12-1997 are primarily considered as the sample of the study. There are 513 cash dividend announcements in the sample period but 93 of them are excluded because those announcements accompanied earnings and / or rights and / or stock dividend announcements. Moreover, 40 cash dividend announcements are excluded because earnings, rights, or stock dividend announcements are made in the event study period of these cash dividend announcements. So, the final sample consists 380 cash dividend announcements amongst 213 dividend increasing announcements, 84 dividend decreasing announcements, and 83 dividend maintaining announcements.

It is worth mentioning that there was a massive fluctuation in the market between 27th June 1996 and 28th March 1997 (See Figure 10.7). So, the empirical part of this chapter also investigates the announcement effect of dividend by excluding the cash dividend announcements in the abnormal period (27th June 1996 to 28th March 1997) as well. There are 28 cash dividend announcements made in the above mentioned abnormal period. Therefore, the excluded sample consists 352 cash dividend announcements amongst 198 dividend increasing announcements, 79 dividend decreasing announcements, and 75 dividend maintaining announcements.

Hypotheses of the study:

H_0: *The mean abnormal returns of the observation period and comparison period are not significantly different from zero.*

The empirical part of this chapter investigates the security price reaction to the announcement of increasing dividends, decreasing dividends, and maintaining dividends. However, to investigate the security price reaction to the announcement of dividends, the empirical part compares the abnormal returns of the observation and

comparison period for four event study periods (±60 days, ±30 days, ±20 days, and ±10 days) simultaneously.

10.3. Empirical Evidences

10.3. A. Good News:

10.3. A. I. Statistics:

The mean abnormal returns in the excluded sample are -.0087%, -.028%, -.0062% and -.010% in the observation periods -60 days, -30 days, -20 days, and -10 days respectively but these returns decrease in the comparison periods +60 days, +30 days, and +20 days, and +10 days (-.12%, -.16%, -.15%, and -.012). However, the mean abnormal returns in the included sample are .0577%, .074%, .13% and .17% in the observation periods -60 days, -30 days, -20 days, and -10 days respectively but these returns also decrease in the comparison periods +30 days, +20 days, and +10 days (-.14%, -.12% and .042%) but the return increases a little bit in comparison period +60 days (.058%). These results show that the abnormal returns decrease after the announcement of increasing dividend in all the study periods (±60 days, ±30 days, ±20 days, and ±10 days) but the returns do not decrease significantly in terms of size after the announcement of dividend increase (Table 10.2).

10.3. A. II. Correlation:

The correlation coefficients between abnormal returns of observation periods and comparison periods of the excluded sample are -.232, -.076, -.243, and .116 and the probability values are .075, .690, .301, and .750 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. However, the correlation coefficients between abnormal returns of observation periods and comparison periods of the included sample are .026, -.010, -.035, and -.322 and the probability values are .844, .958, .882, and .365 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. The correlation coefficients indicate a negative relationship between the abnormal returns of the observation periods and comparison periods for dividend increase announcements in all the study periods (±60 days, ±30 days, ±20 days, and ±10 days). However, these results do not explain a very high degree significant correlation between the abnormal returns of observation period and comparison period either of the case (Table 10.3).

Table 10.2: Good News: Paired Samples Statistics

	Excluding the Unusual Period				Including the Unusual Period			
Period	N	Mean	Std. Deviation	Std. Error	N	Mean	Std. Deviation	Std. Error
- 60 Days	198	-8.7347E-05	3.504E-03	4.524E-04	213	5.774E-04	3.762E-03	4.857E-04
+ 60 Days	198	-1.2395E-03	2.896E-03	3.739E-04	213	5.797E-04	1.354E-02	1.748E-03
- 30 Days	198	-2.7575E-04	2.125E-03	3.880E-04	213	7.386E-04	2.726E-03	4.977E-04
+ 30 Days	198	-1.5789E-03	3.518E-03	6.423E-04	213	-1.4483E-03	4.152E-03	7.581E-04
- 20 Days	198	-6.1862E-05	2.198E-03	4.914E-04	213	1.288E-03	2.761E-03	6.175E-04
+ 20 Days	198	-1.4592E-03	3.614E-03	8.080E-04	213	-1.1592E-03	4.401E-03	9.842E-04
- 10 Days	198	-1.0150E-04	1.996E-03	6.311E-04	213	1.703E-03	2.502E-03	7.913E-04
+ 10 Days	198	-1.2185E-04	3.647E-03	1.153E-03	213	4.247E-04	4.897E-03	1.549E-03

Table 10.3: Good News: Paired Samples Correlation

	Excluding the Unusual Period			Including the Unusual Period		
Period	N	Correlation	Sig.	N	Correlation	Sig.
± 60 Days	198	-.232	.075	213	.026	.844
± 30 Days	198	-.076	.690	213	-.010	.958
± 20 Days	198	-.243	.301	213	-.035	.882
± 10 Days	198	.116	.750	213	-.322	.365

10.3. A. III. T-Test:

The mean difference between the abnormal returns of the observation and the comparison periods of excluded sample are 1.152E-03, 1.303E-03, 1.397E-03, and 2.035E-05 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. However, the mean difference between the abnormal returns of the observation and the comparison periods of included sample are 2.3145E-06, 2.187E-03, 2.447E-03, and 1.278E-03 respectively for ±60 days, ±30 days, ±20 days, and ±10 days.

The t-values and the probability values of excluded sample are 1.772, 1.681, 1.340, and .016, and .082, .103, .196, and .987 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. However, the t-values and the probability values of included sample are -.001, 2.400, 2.074 and .654, and .999, .023, .052 and .529 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. These results imply that the mean difference of the abnormal returns between observation and comparison periods is not significantly different from zero.

So, these empirical results document that abnormal returns are decreasing but not significantly after the announcement of increasing dividends. Therefore, it is clear that the mean returns of the observation periods (-60 days, -30 days, -20 days, and -10 days) and comparison periods (+60 days, +30 days, +20 days, and +10 days) for dividend increasing announcements are not significantly different from zero. The sequence charts of the abnormal returns for the event study periods (see Figures 10.1a, 10.1b, 10.1c, 10.1d, 10.2a, 10.2b, 10.2c, and 10.2d) also support the same argument as the empirical findings. However, these results are completely contradictory with the previous empirical studies (Table 10.4).

10.3. B. Bad News:

10. B. I. Statistics:

The mean abnormal returns in the excluded sample are .75%, -.76%, -.77% and -.81% in the observation periods -60 days, -30 days, -20 days, and -10 days respectively but these returns decrease in the comparison periods +60 days, +30 days, and +20 days, and +10 days (-.91%, -.89%, -.96%, and -1.03%). However, the mean abnormal returns in the included sample are .74%, -.68%, -.68% and -.73% in the

Figure 10.1: Sequence Chart: Good News: Excluding the Unusual Period

Figure 10.1a: ± 60 Days of the Event Day

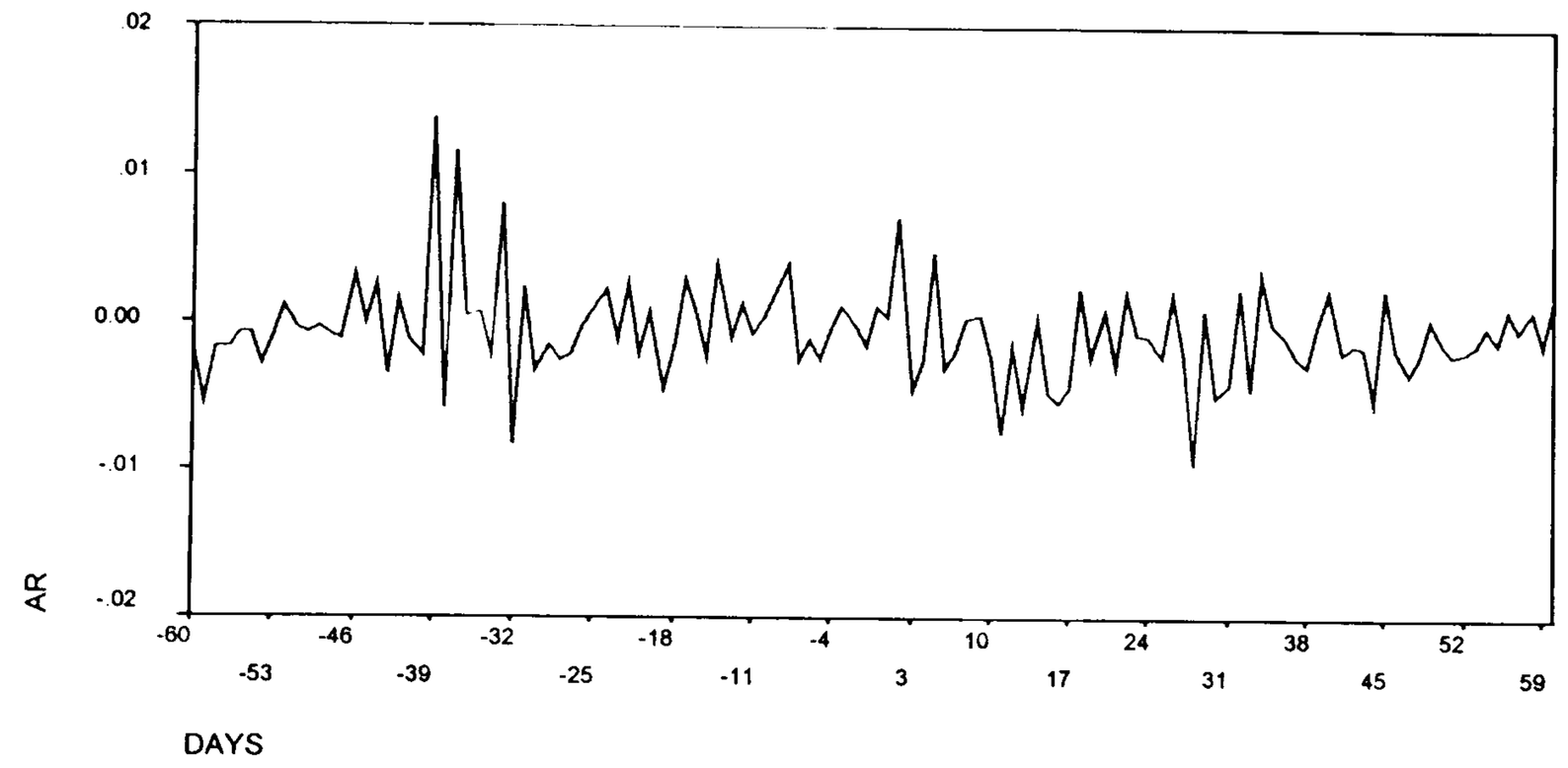


Figure 10.1b: ± 30 Days of the Event Day

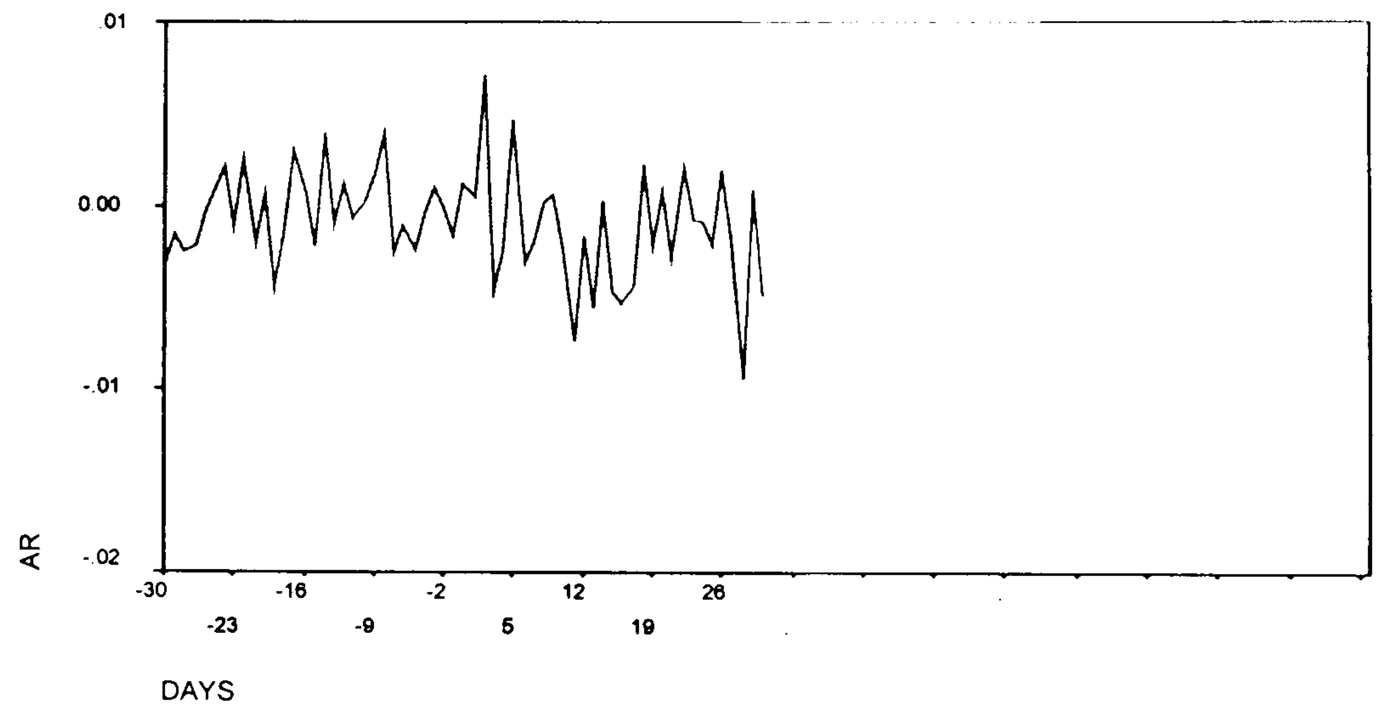


Figure 10.1c: ± 20 Days of the Event Day

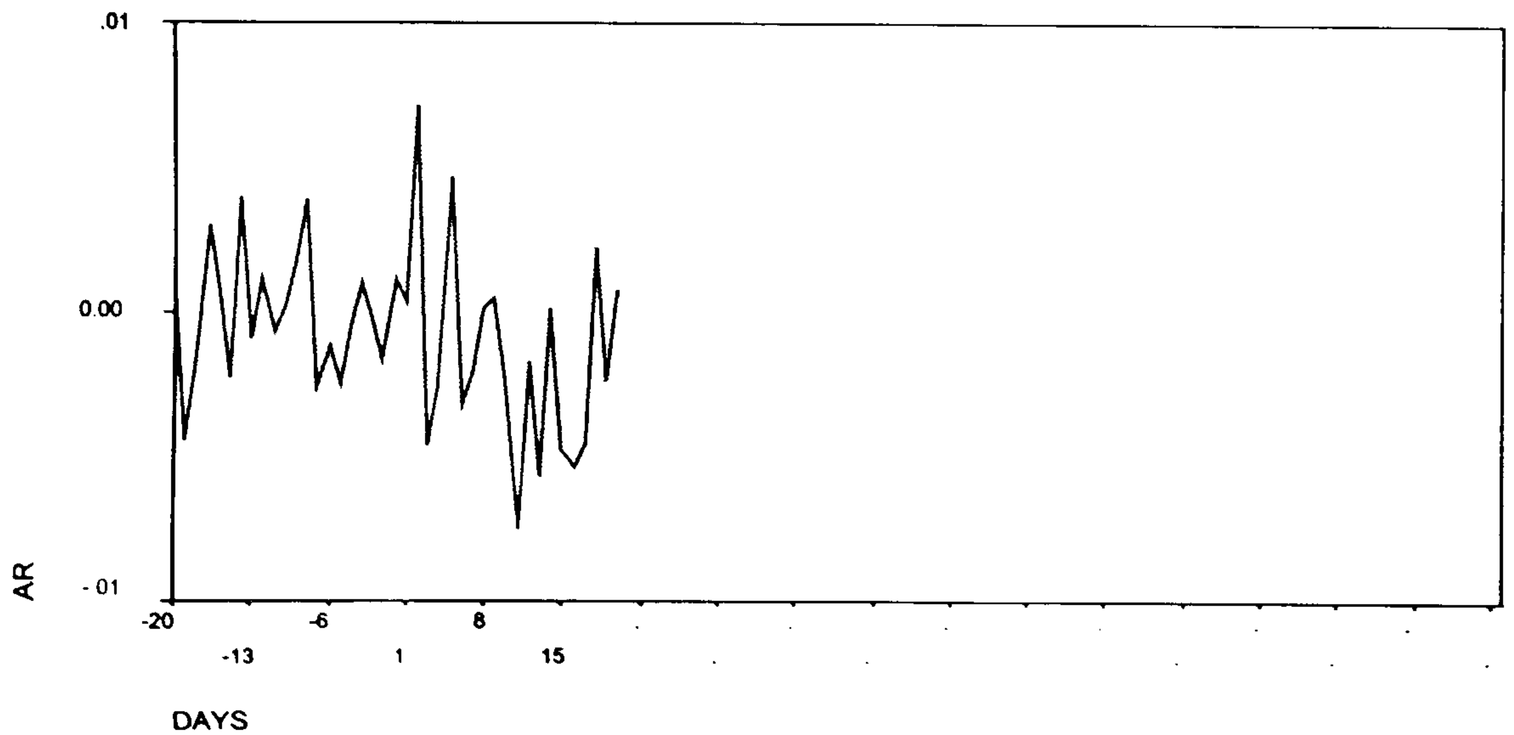


Figure 10.1d: ± 10 Days of the Event Day

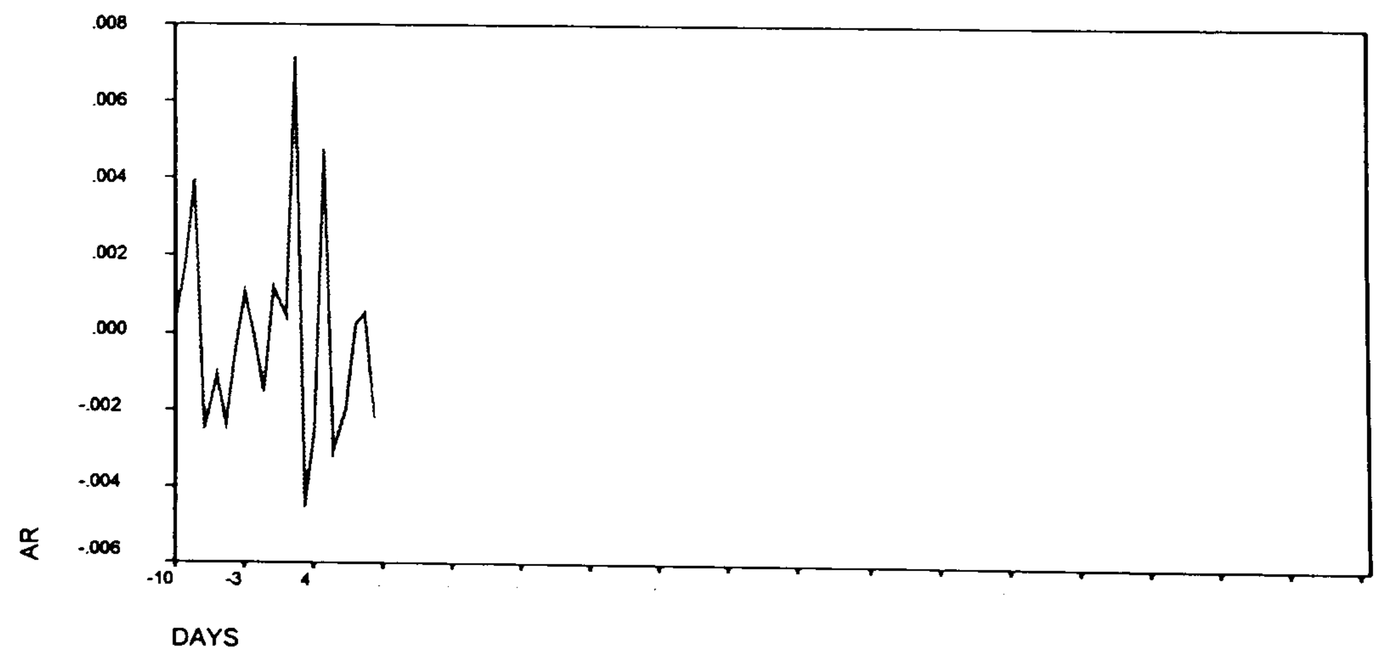


Figure 10.2: Sequence Chart: Good News: Including the Unusual Period

Figure 10.2a: ± 60 Days of the Event Day

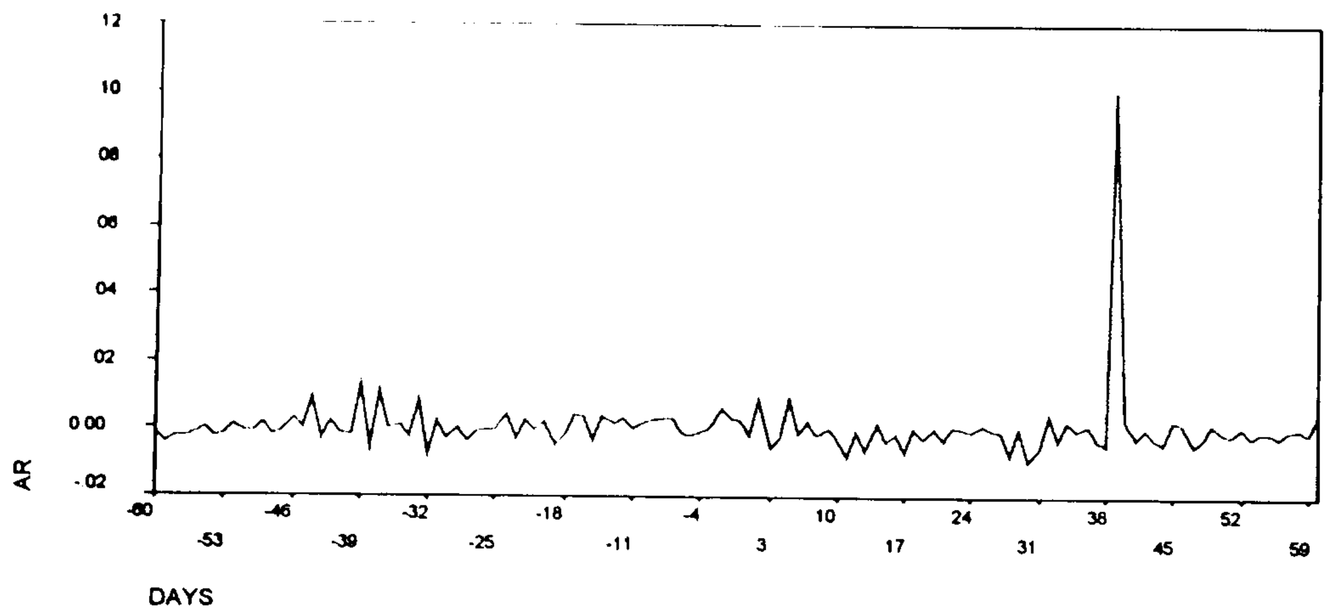


Figure 10.2b: ± 30 Days of the Event Day

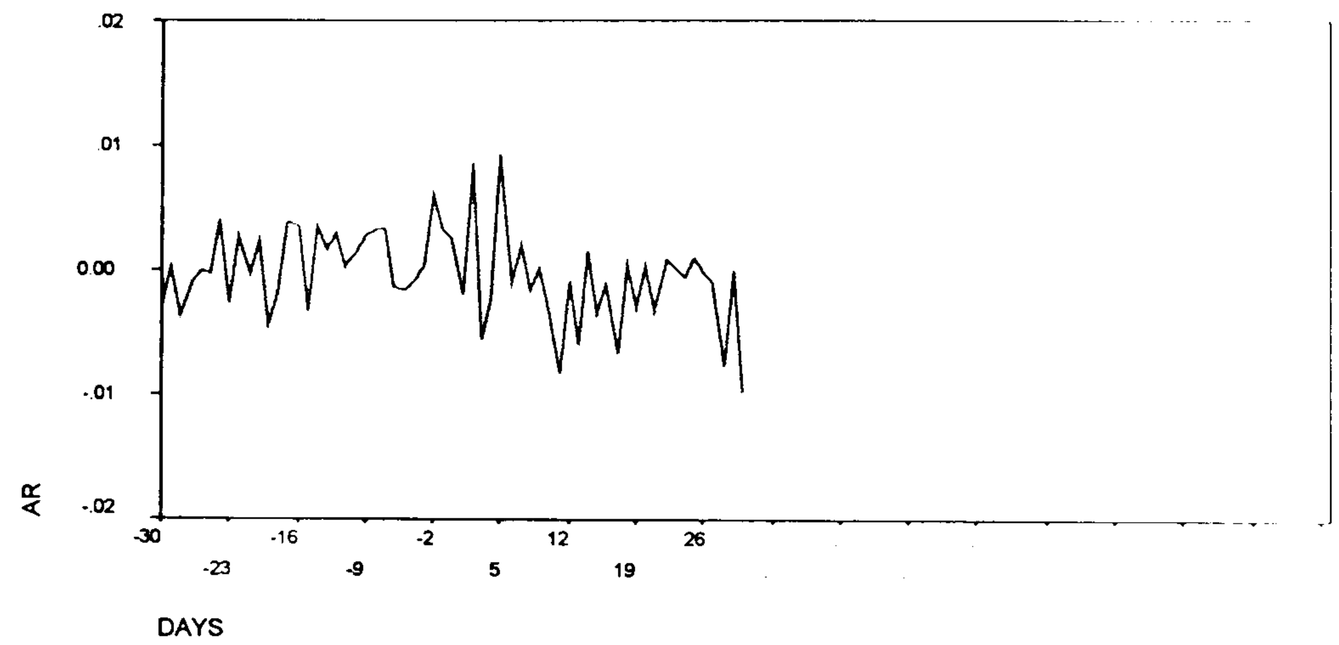


Figure 10.2c: ± 20 Days of the Event Day

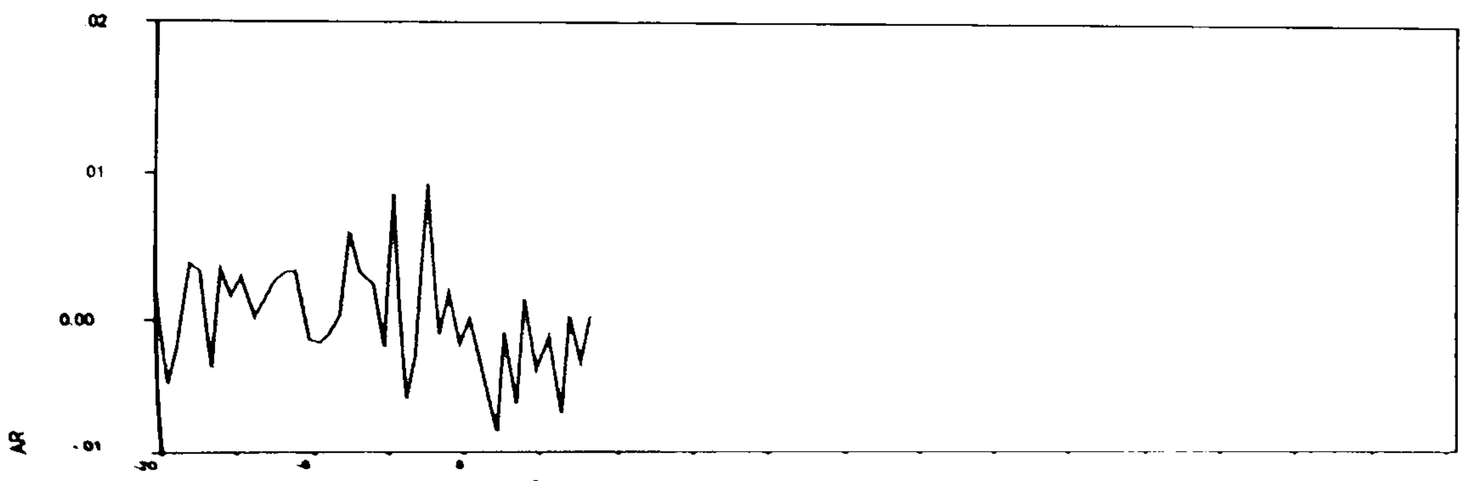


Figure 10.2d: ± 10 Days of the Event Day

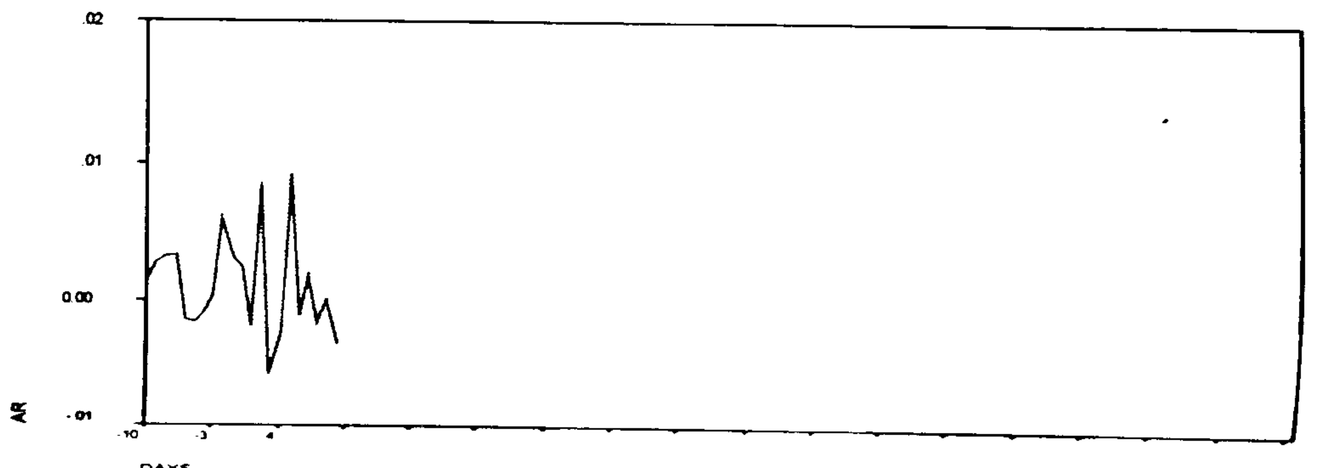


Table 10.4: Good News: Paired Samples T-Test

Period	Excluding the Unusual Period								Including the Unusual Period							
	Paired Differences					T	d.f.	Sig. (2 Tailed)	Paired Differences					T	d.f.	Sig. (2 Tailed)
	Mean	Std Deviation	Std. Error	95% Confidence Interval of the Difference					Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
				Lower	Upper							Lower	Upper			
± 60 Days	1.152E-03	5.037E-03	6.503E-04	-1.4907E-04	2.453E-03	1.772	197	.082	-2.3145E-06	1.396E-02	1.802E-03	-3.6089E-03	3.604E-03	-.001	212	.999
± 30 Days	1.303E-03	4.246E-03	7.752E-04	-2.8220E-04	2.889E-03	1.681	197	.103	2.187E-03	4.990E-03	9.110E-04	3.236E-04	4.050E-03	2.400	212	.023
± 20 Days	1.397E-03	4.664E-03	1.043E-03	-7.8564E-04	3.580E-03	1.340	197	.196	2.447E-03	5.278E-03	1.180E-03	-2.2705E-05	4.918E-03	2.074	212	.052
± 10 Days	2.035E-05	3.949E-03	1.249E-03	-2.8049E-03	2.846E-03	.016	197	.987	1.278E-03	6.175E-03	1.953E-03	-3.1394E-03	5.695E-03	.654	212	.529

observation periods -60 days, -30 days, -20 days, and -10 days respectively but these returns also decrease in the comparison periods +60 days, +30 days, +20 days, and +10 days (-.86%, -.83%, -.90% and -.96%). These results indicate that the abnormal returns decrease after the announcement of dividend decrease but these returns do not decrease significantly in terms of size after the announcement of dividends (Table 10.5).

10.3. B. II. Correlation:

The correlation coefficients between abnormal returns of observation periods and comparison periods of the excluded sample are .029, -.330, -.603, and -.630 and the probability values are .829, .075, .005, and .051 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. However, the correlation coefficients between abnormal returns of observation periods and comparison periods in the included sample are .104, -.328, -.218, and -.122 and the probability values are .431, .077, .355, and .738 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. The correlation coefficients indicate a negative relationship between the abnormal returns of the observation periods and the comparison periods for the dividend decreasing announcements in all the study periods (±60 days, ±30 days, ±20 days, and ±10 days). However, these results do not explain a very high degree significant correlation between the abnormal returns of observation periods and comparison periods either of the case (Table 10.6).

10.3. B. III. T-Test:

The mean difference between the abnormal returns of the observation and the comparison periods in the excluded sample are 1.661E-02, 1.274E-03, 1.898E-03, and 2.178E-03 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. However, the mean difference between the abnormal returns of the observation and the comparison periods in the included sample are 1.599E-02, 1.522E-03, 2.227E-03, and 2.287E-03 respectively for ±60 days, ±30 days, ±20 days, and ±10 days.

The t-values and the probability values of the excluded sample are 1.243, 1.559, 1.683, and 1.261, and .219, .130, .109, and .239 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. However, the t-values and the probability values of the included sample are 1.272, 1.720, 1.947, and 1.383, and .208, .096, .066, and .200

Table 10.5: Bad News: Paired Samples Statistics

	Excluding the Unusual Period				Including the Unusual Period			
Period	N	Mean	Std. Deviation	Std. Error	N	Mean	Std. Deviation	Std. Error
- 60 Days	79	7.536E-03	.1036	1.337E-02	84	7.354E-03	9.766E-02	1.261E-02
+ 60 Days	79	-9.0708E-03	3.404E-03	4.395E-04	84	-8.6396E-03	3.470E-03	4.480E-04
- 30 Days	79	-7.6235E-03	1.851E-03	3.380E-04	84	-6.7573E-03	2.216E-03	4.047E-04
+ 30 Days	79	-8.8973E-03	3.509E-03	6.406E-04	84	-8.2795E-03	3.645E-03	6.655E-04
- 20 Days	79	-7.7357E-03	1.901E-03	4.250E-04	84	-6.7530E-03	2.477E-03	5.539E-04
+ 20 Days	79	-9.6341E-03	3.663E-03	8.192E-04	84	-8.9803E-03	3.966E-03	8.869E-04
- 10 Days	79	-8.1453E-03	1.786E-03	5.648E-04	84	-7.3498E-03	2.195E-03	6.942E-04
+ 10 Days	79	-1.0324E-02	4.159E-03	1.315E-03	84	-9.6368E-03	4.488E-03	1.419E-03

Table 10.6: Bad News: Paired Samples Correlation

	Excluding the Unusual Period			Including the Unusual Period		
Period	N	Correlation	Sig.	N	Correlation	Sig.
± 60 Days	79	.029	.829	84	.104	.431
± 30 Days	79	-.330	.075	84	-.328	.077
± 20 Days	79	-.603	.005	84	-.218	.355
± 10 Days	79	-.630	.051	84	-.122	.738

respectively for ±60 days, ±30 days, ±20 days, and ±10 days. These results, however, imply that the mean difference of the abnormal returns between observation and comparison periods is not significantly different from zero.

So, these empirical results also evidence that abnormal returns are decreasing but not significantly after the announcements of decreasing dividends. However, it is clear that the mean returns of the observation periods (-60 days, -30 days, -20 days, and –10 days) and comparison periods (+60 days, +30 days, +20 days, and +10 days) for dividend decreasing announcements are not significantly different from zero. The sequence charts of the abnormal returns for the event study periods (see Figures 10.3a, 10.3b, 10.3c, 10.3d, 10.4a, 10.4b, 10.4c, and 10.4d) also support the empirical findings of this study. While the abnormal returns of the differential periods are not significantly different from zero, the empirical results support (narrowly) the previous studies that negative dividend change produce negative common stock prices (Asquith and Mullins, 1983; Healey and Palepu, 1988; and Michaely *et al.* 1995) (Table 10.7).

10.3. C. No News:

10.3. C. I. Statistics:

The mean abnormal returns in the excluded sample are .038%, .05%, .057%, and .10% in the observation periods -60 days, -30 days, -20 days, and -10 days respectively but these returns decrease in the comparison periods +60 days, +30 days, and +20 days, and +10 days (-.053%, -.16%, -.20% and -.21%). However, the mean abnormal returns in the included sample are .29%, .57%, .80%, and .15% in the observation periods -60 days, -30 days, -20 days, and -10 days respectively but these returns also decrease in the comparison periods +60 days, +30 days, +20 days, and +10 days (-.077%, -.018%, -.021%, and -.020%). These results show that abnormal returns decrease after the announcement of dividends but the returns do not decrease significantly in terms of size after the announcements of maintaining dividends (Table 10.8).

10.3. C. II. Correlation:

The correlation coefficients between abnormal returns of observation periods and comparison periods of the excluded sample are .039, -.219, -.037, and -.407 and the probability values are .770, .244, .876, and .243 respectively for ±60 days, ±30

Figure 10.3: Sequence Chart: Bad News: Excluding the Unusual Period

Figure 10.3a: ± 60 Days of the Event Day

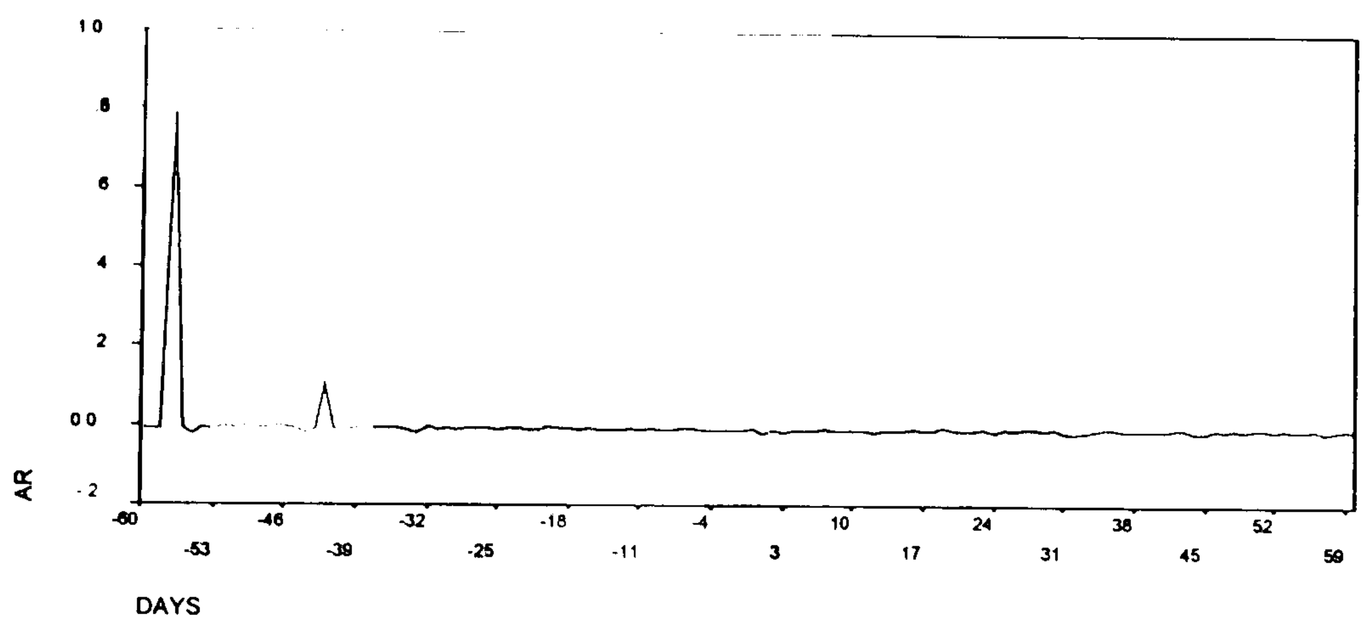


Figure 10.3b: ± 30 Days of the Event Day

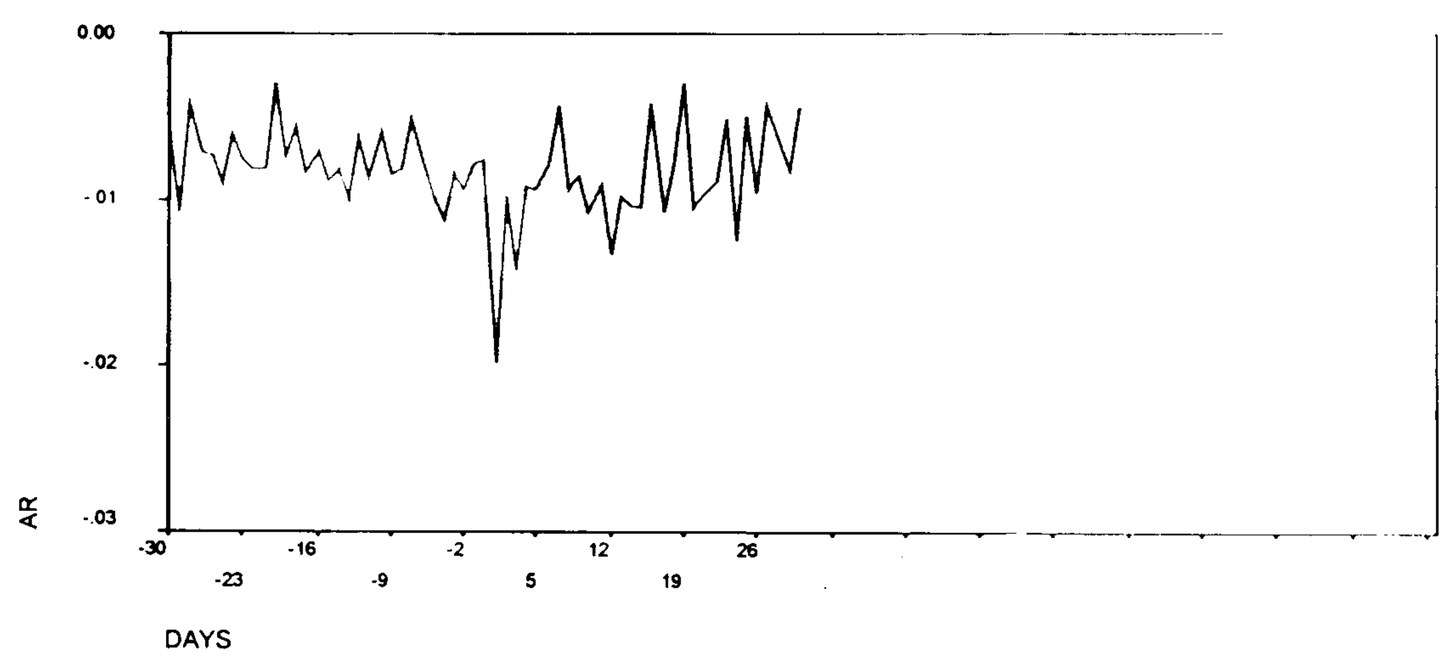


Figure 10.3c: ± 20 Days of the Event Day

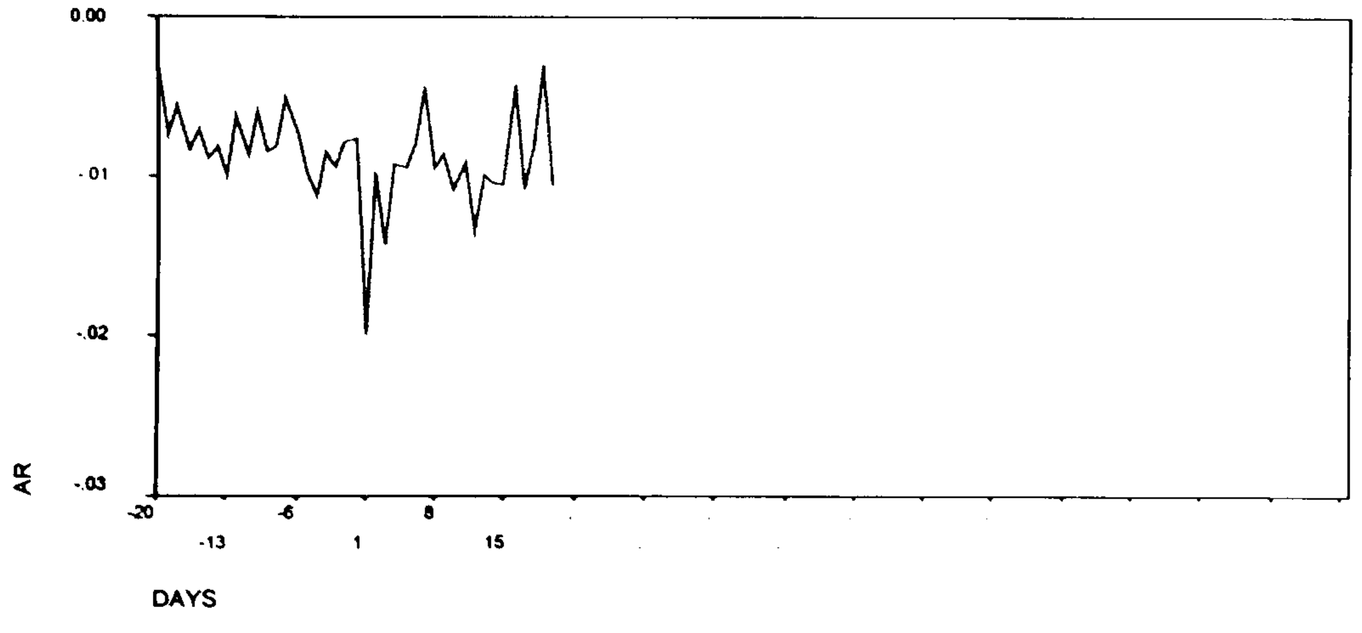


Figure 10.3d: ± 10 Days of the Event Day

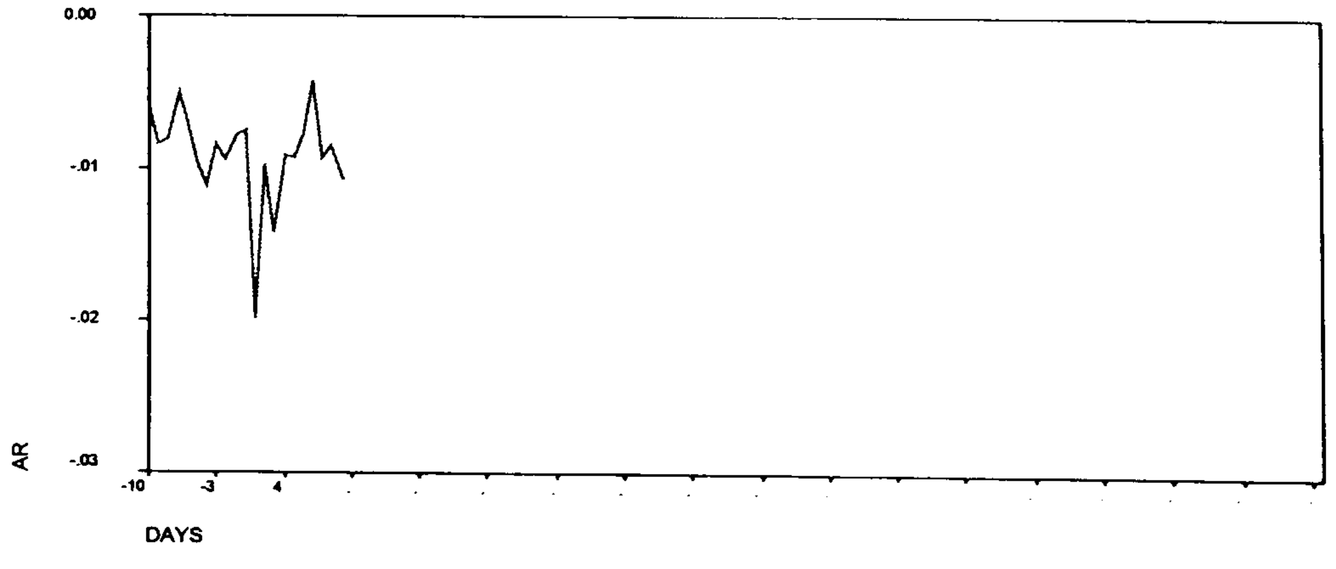


Figure 10.4: Sequence Chart: Bad News: Including the Unusual Period

Figure 10.4a: ± 60 Days of the Event Day

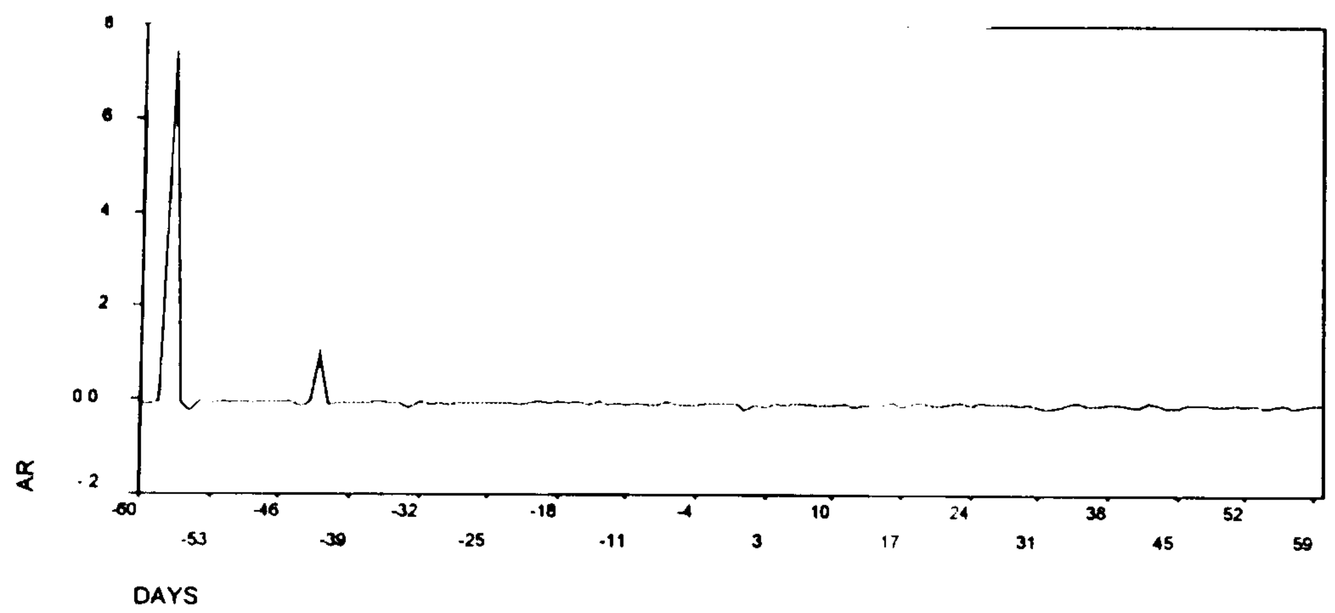


Figure 10.4b: ± 30 Days of the Event Day

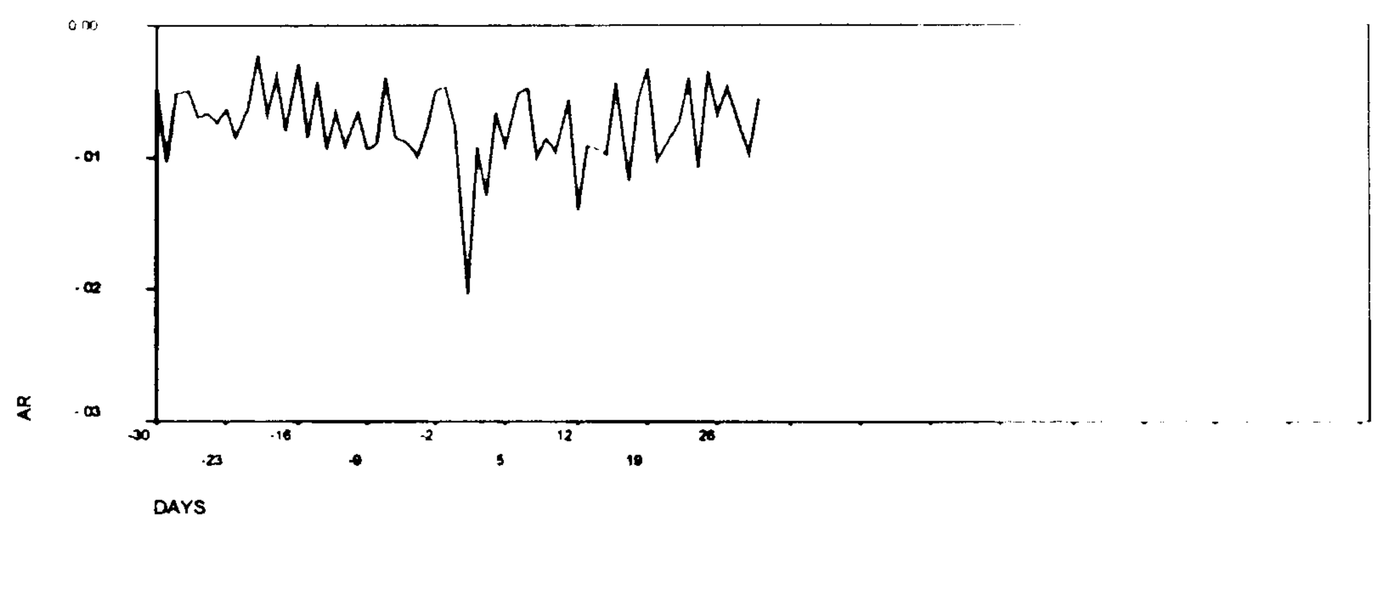


Figure 10.4c: ± 20 Days of the Event Day

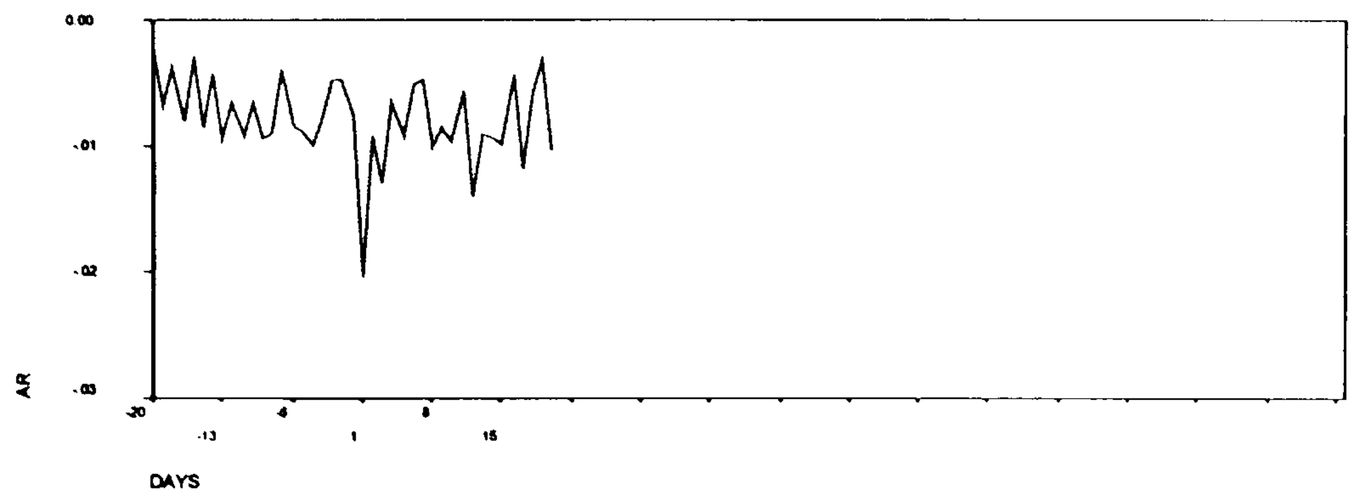


Figure 10.4d: ± 10 Days of the Event Day

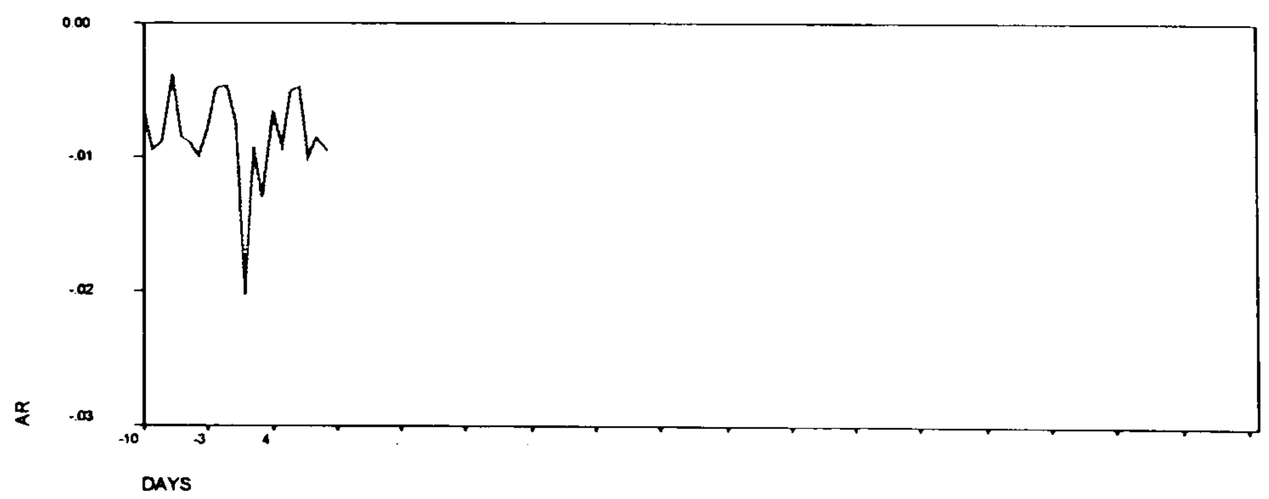


Table 10.7: Bad News: Paired Samples T-Test

Period	Excluding the Unusual Period								Including the Unusual Period							
	Paired Differences					T	d.f.	Sig. (2 Tailed)	Paired Differences					T	d.f.	Sig. (2 Tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference					Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
				Lower	Upper							Lower	Upper			
± 60 Days	1.661E-02	.1035	1.336E-02	-1.0133E-02	4.335E-02	1.243	78	.219	1.599E-02	9.736E-02	1.257E-02	-9.1565E-03	4.114E-02	1.272	83	.208
± 30 Days	1.274E-03	4.475E-03	8.171E-04	-3.9730E-04	2.945E-03	1.559	78	.130	1.522E-03	4.847E-03	8.849E-04	-2.8764E-04	3.332E-03	1.720	83	.096
± 20 Days	1.898E-03	5.044E-03	1.128E-03	-4.6210E-04	4.259E-03	1.683	78	.109	2.227E-03	5.115E-03	1.144E-03	-1.6656E-04	4.621E-03	1.947	83	.066
± 10 Days	2.178E-03	5.464E-03	1.728E-03	-1.7303E-03	6.087E-03	1.261	78	.239	2.287E-03	5.230E-03	1.654E-03	-1.4546E-03	6.029E-03	1.383	83	.200

days, ±20 days, and ±10 days. However, the correlation coefficients between abnormal returns of observation periods and comparison periods of the included sample are -.018, -.127, .023, and -.427 and the probability values are .892, .504, .925, and .218 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. The correlation coefficients indicate a negative relationship between the abnormal returns of the observation periods and comparison periods for dividend maintaining announcements in all the study periods (±60 days, ±30 days, ±20 days, and ±10 days). However, these results do not explain a very high degree significant correlation between the abnormal returns of observation periods and comparison periods either of the case (Table 10.9).

10.3. C. III. T-Test:

The mean difference between the abnormal returns of the observation and the comparison periods of the excluded sample are 9.163E-04, 2.103E-03, 2.572E-03, and 3.100E-03 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. However, the mean difference between the abnormal returns of the observation and the comparison periods of the included sample are 3.714E-03, 7.460E-03, 1.008E-02, and 1.695E-02 respectively for ±60 days, ±30 days, ±20 days, and ±10 days.

The t-values and the probability values of the excluded sample are 1.491, 2.005, 1.974, and 1.207, and .141, .054, .063, and .258 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. However, the t-values and the probability values of the included sample are 1.413, 1.440, 1.319, and 1.069, and .163, .161, .203, and .313 respectively for ±60 days, ±30 days, ±20 days, and ±10 days. These results imply that the mean difference of the abnormal returns between observation and comparison periods is not significantly different from zero.

The empirical studies also document that abnormal returns are decreasing but not significantly after the announcement of maintaining dividends. However, it is clear that the mean returns of the observation periods (-60 days, -30 days, -20 days, and -10 days) and comparison periods (+60 days, +30 days, +20 days, and +10 days) for dividend maintaining announcements are not significantly different from zero. The sequence charts of the abnormal returns for the event study periods (see Figures 10.5a, 10.5b, 10.5c, 10.5d, 10.6a, 10.6b, 10.6c, and 10.6d) also support the empirical findings

Table 10.8: No News: Paired Samples Statistics

	Excluding the Unusual Period				Including the Unusual Period			
Period	N	Mean	Std. Deviation	Std. Error	N	Mean	Std. Deviation	Std. Error
- 60 Days	75	3.819E-04	3.316E-03	4.281E-04	83	2.941E-03	1.979E-02	2.555E-03
+ 60 Days	75	-5.3446E-04	3.547E-03	4.579E-04	83	-7.7266E-04	4.452E-03	5.747E-04
- 30 Days	75	4.991E-04	4.300E-03	7.850E-04	83	5.690E-03	2.782E-02	5.080E-03
+ 30 Days	75	-1.6040E-03	2.983E-03	5.447E-04	83	-1.7705E-03	3.092E-03	5.646E-04
- 20 Days	75	5.662E-04	5.034E-03	1.126E-03	83	7.952E-03	3.411E-02	7.626E-03
+ 20 Days	75	-2.0060E-03	2.754E-03	6.159E-04	83	-2.1245E-03	3.045E-03	6.808E-04
- 10 Days	75	1.007E-03	6.072E-03	1.920E-03	83	1.496E-02	4.826E-02	1.526E-02
+ 10 Days	75	-2.0927E-03	3.456E-03	1.093E-03	83	-1.9871E-03	4.103E-03	1.297E-03

Table 10.9: No News: Paired Samples Correlation

	Excluding the Unusual Period			Including the Unusual Period		
Period	N	Correlation	Sig.	N	Correlation	Sig.
± 60 Days	75	.039	.770	83	-.018	.892
± 30 Days	75	-.219	.244	83	-.127	.504
± 20 Days	75	-.037	.876	83	.023	.925
± 10 Days	75	-.407	.243	83	-.427	.218

Figure 10.5: Sequence Chart: No News: Excluding the Unusual Period

Figure 10.5a: ± 60 Days of the Event Day

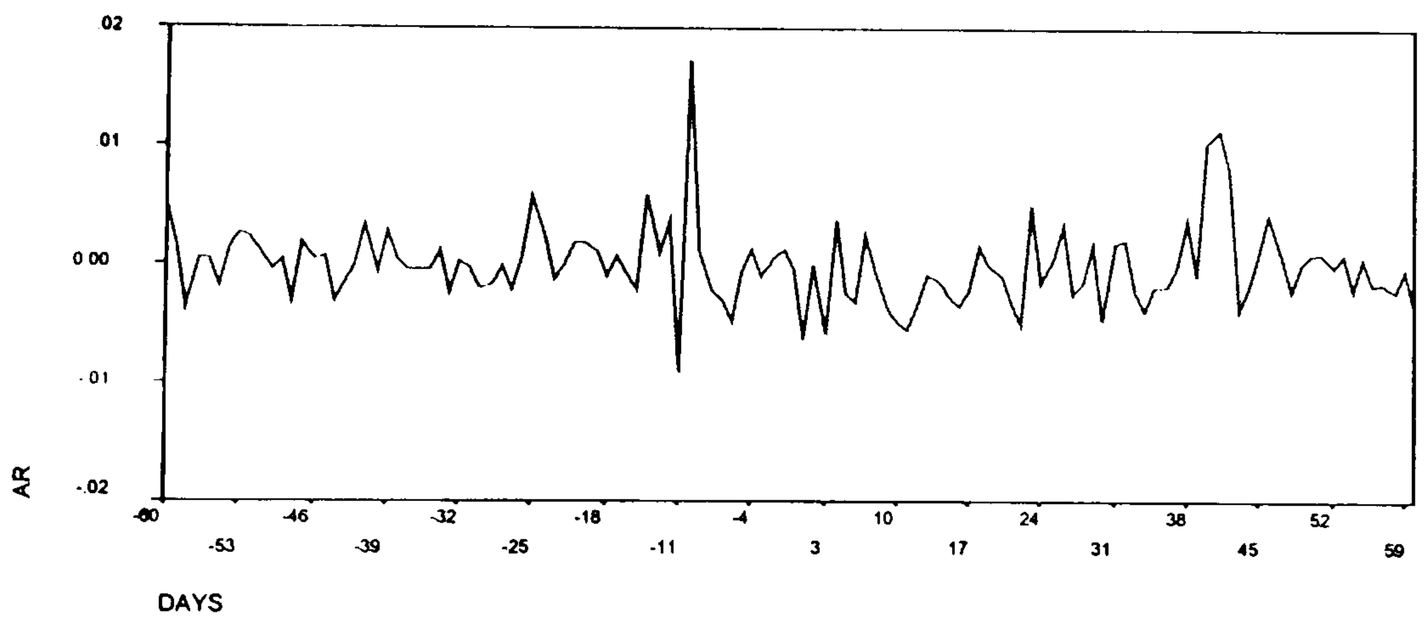


Figure 10.5b: ± 30 Days of the Event Day

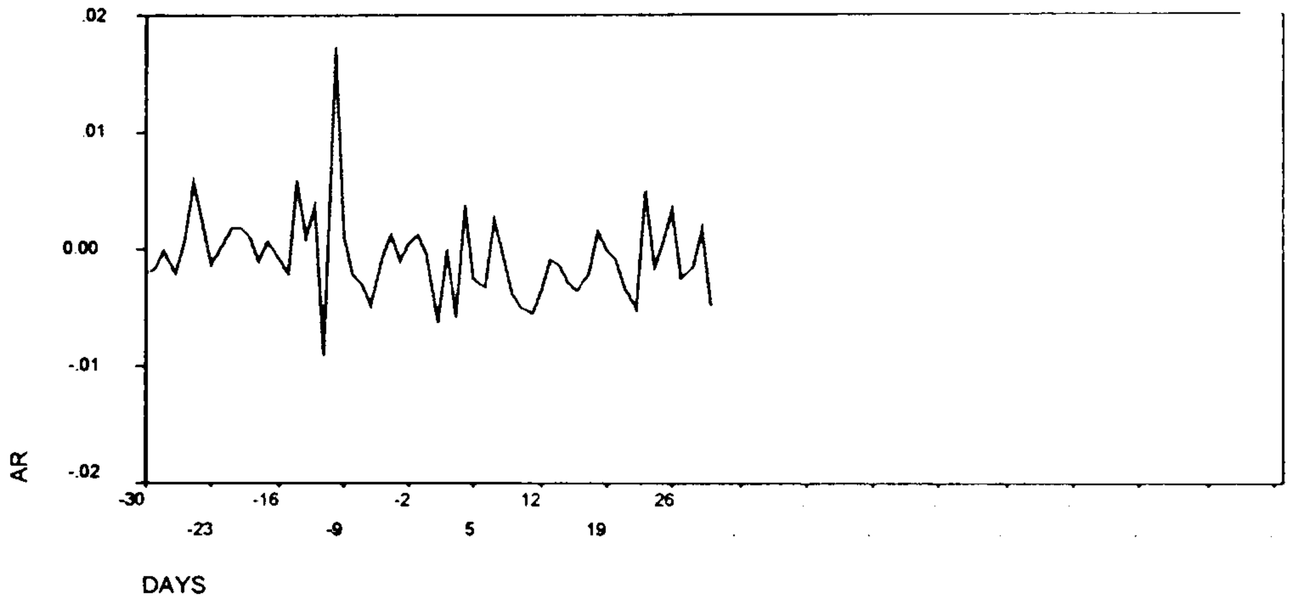


Figure 10.5c: ± 20 Days of the Event Day

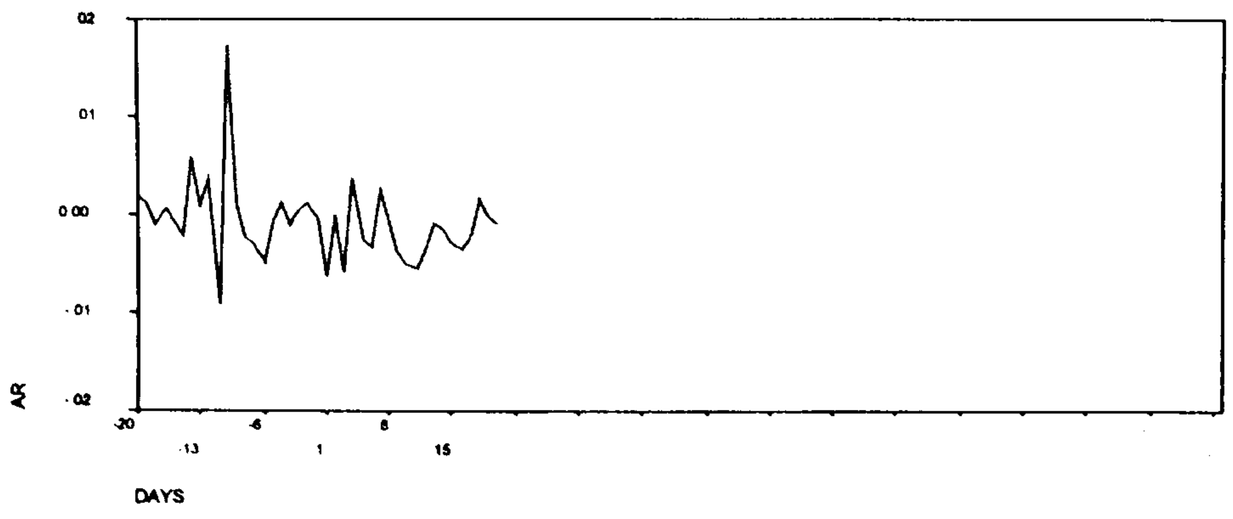


Figure 10.5d: ± 10 Days of the Event Day

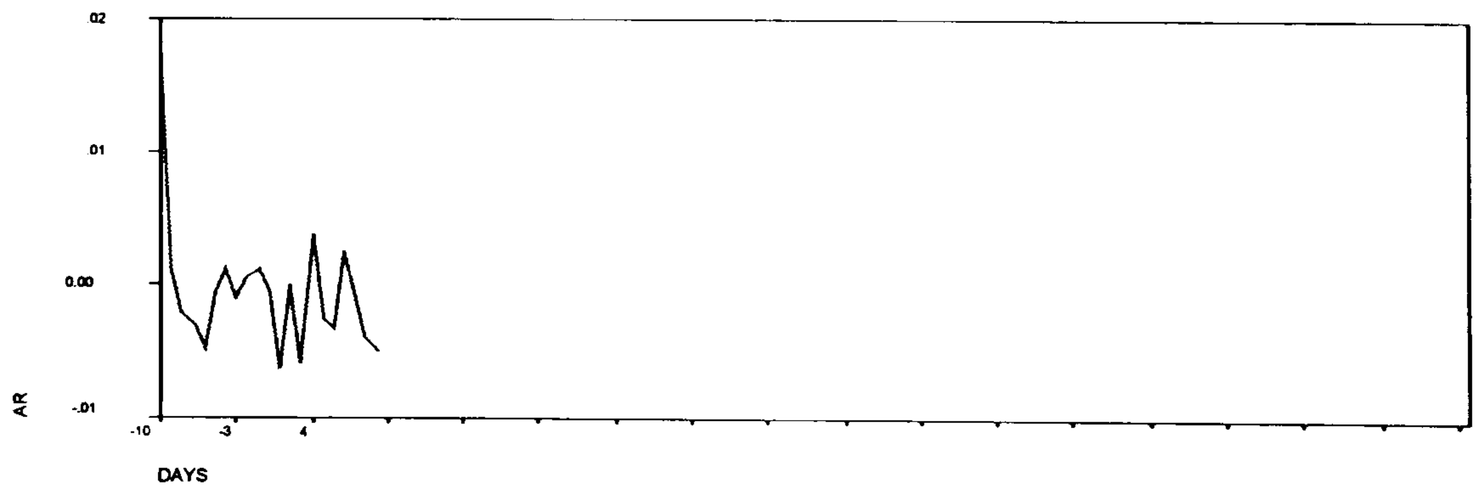


Figure 10.6: Sequence Chart: No News: Including the Unusual Period

Figure 10.6a: ± 60 Days of the Event Day

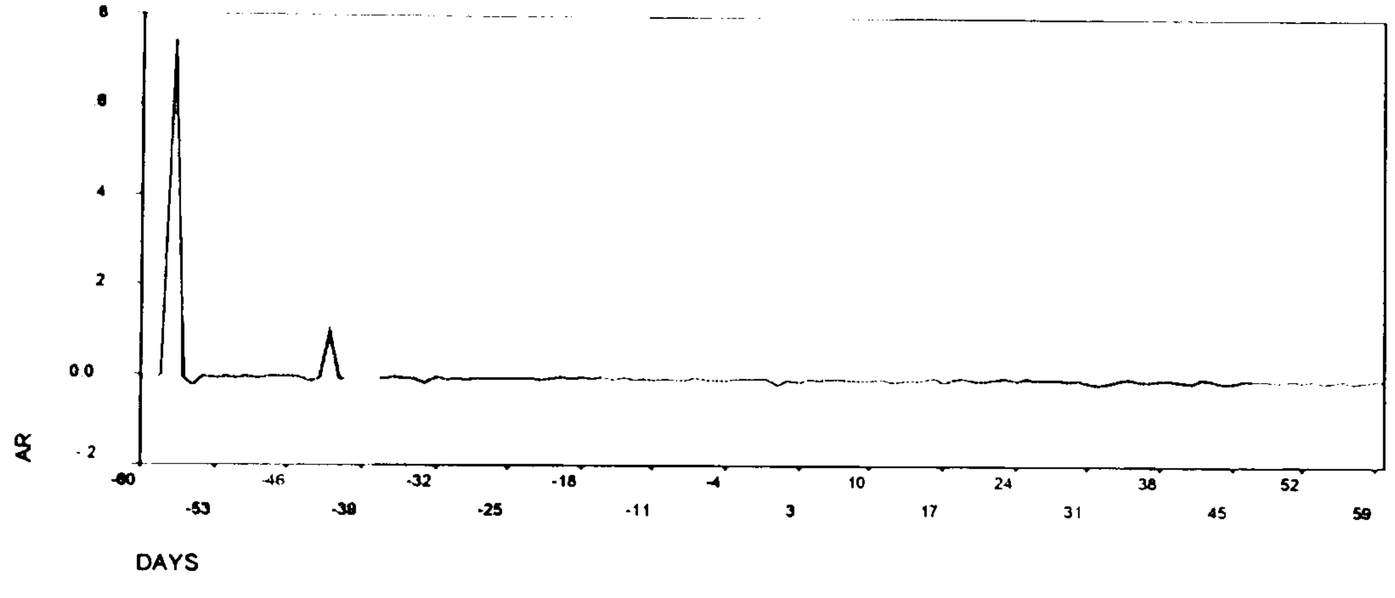


Figure 10.6b: ± 30 Days of the Event Day

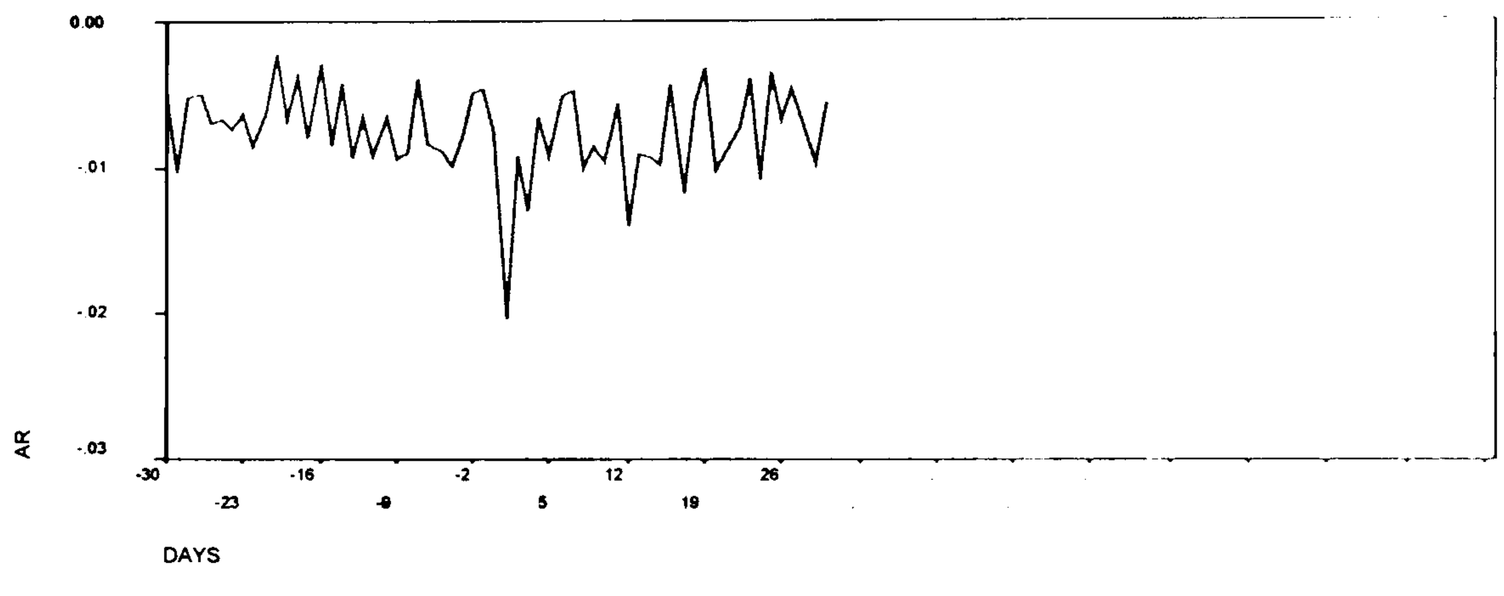


Figure 10.6c: ± 20 Days of the Event Day

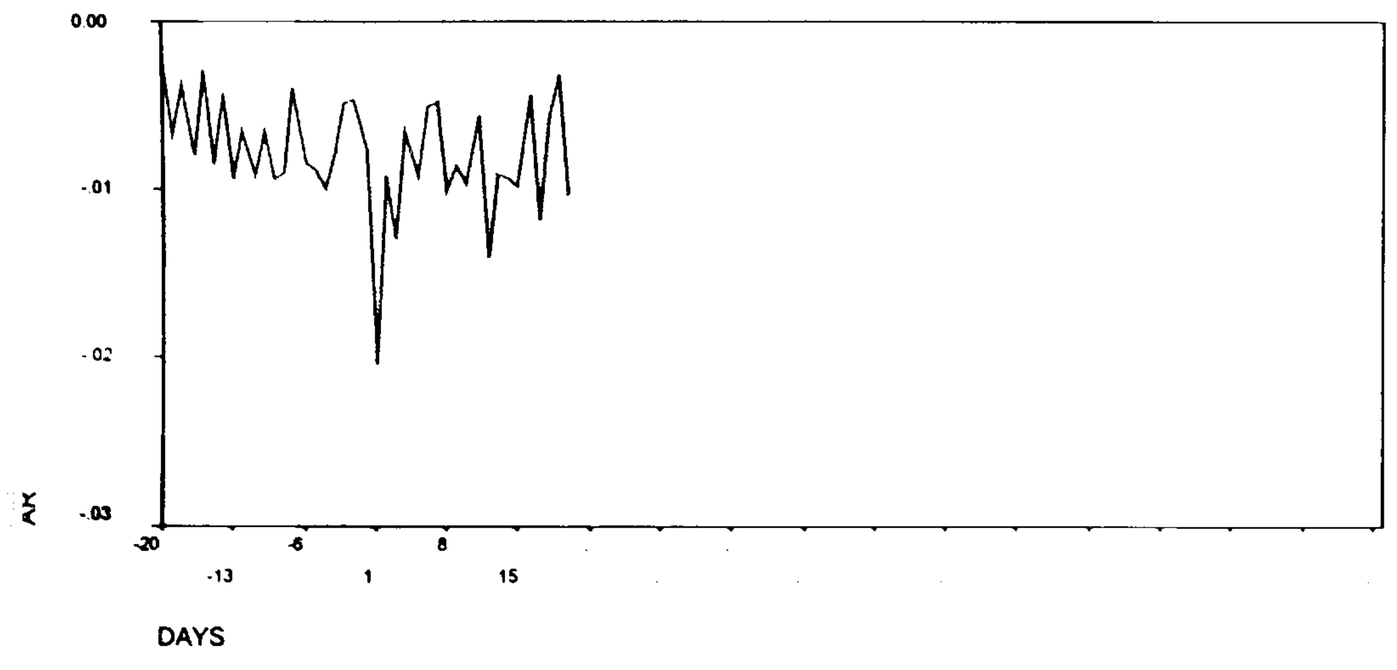
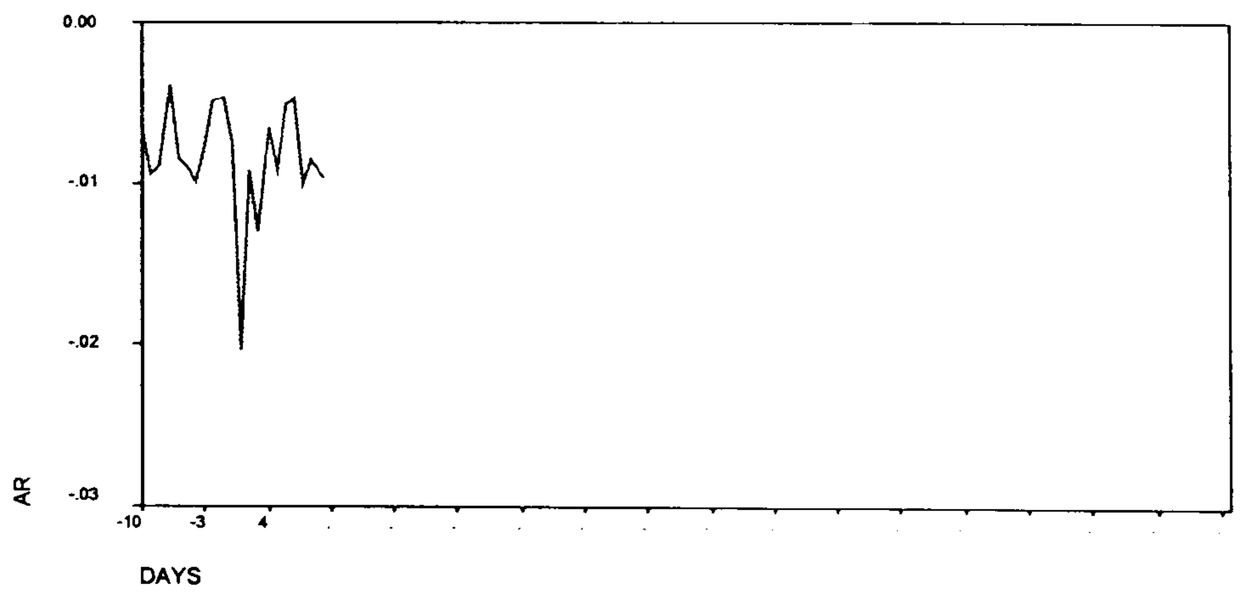


Figure 10.6d: ± 10 Days of the Event Day



of this study. However, these results are contradictory with the previous empirical studies (Table 10.10).

The empirical results accept the announcement effect hypothesis of dividend. It is observed from the empirical results that security return decreases after the announcement of either good, bad, or no news of dividends in the Dhaka Stock Exchange. However, the negative correlation between the returns of observation and comparison period also supports the same argument. Although, the abnormal returns are decreasing after the announcement of increasing, decreasing, and maintaining dividends, the differential returns between observation periods and comparison periods are not significantly different from zero. However, even though the empirical results of the dividend-decreasing sub-sample narrowly support previous empirical studies, the empirical results of the dividend increasing and dividend maintaining announcement sub-samples completely disagree with the previous empirical studies. Moreover, this is the similarity among these sub-samples, i.e.; security price is decreasing after the announcement of good news (increasing dividends), bad news (decreasing dividends), and no news (maintaining dividends). So, this is the indication of the ineffectiveness of the announcements of dividends in emerging markets.

The empirical results evidence that there is no significant impact of dividend announcement on the security prices of an emerging market because as insiders trade in the market, so, the information used to be adjusted with the share prices before announcement and consequently announcement of dividends do not carry any new information to the market. However, these results also strongly reject signalling theory of dividend. Besides, one of the most important reasons for the ineffectiveness of the announcements of dividend in an emerging market is the insider's motivated trading before and after the announcement of dividends. As we have already been mentioned earlier that insiders are holding higher proportion of stocks of the DSE, so, usually insiders start to buy back the shares before the AGM for higher voting rights that causes higher demand of shares and consequently higher share returns. Moreover, insiders off load shares after AGM that also causes higher supply of shares and consequently returns fall.

Table 10.10: No News: Paired Samples T-Test

Period	Excluding the Unusual Period								Including the Unusual Period							
	Paired Differences					T	d.f.	Sig. (2 Tailed)	Paired Differences					T	d.f.	Sig. (2 Tailed)
	Mean	Std Deviation	Std. Error	95% Confidence Interval of the Difference					Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
				Lower	Upper							Lower	Upper			
± 60 Days	9.163E-04	4.761E-03	6.147E-04	-3.1361E-04	2.146E-03	1.491	74	.141	3.714E-03	2.037E-02	2.629E-03	-1.5470E-03	8.975E-03	1.413	82	.163
± 30 Days	2.103E-03	5.746E-03	1.049E-03	-4.2484E-05	4.249E-03	2.005	74	.054	7.460E-03	2.838E-02	5.182E-03	-3.1383E-03	1.806E-02	1.440	82	.161
± 20 Days	2.572E-03	5.827E-03	1.303E-03	-1.5502E-04	5.299E-03	1.974	74	.063	1.008E-02	3.417E-02	7.641E-03	-5.9175E-03	2.607E-02	1.319	82	.203
± 10 Days	3.100E-03	8.117E-03	2.567E-03	-2.7072E-03	8.906E-03	1.207	74	.258	1.695E-02	5.014E-02	1.586E-02	-1.8921E-02	5.282E-02	1.069	82	.313

However, as we have already been mentioned in the empirical phase one of this study that the DSE listed companies follow stable dividend policy but they do not adjust profits to the payment of dividends perfectly, so, dividend does not contain accurate information and as a result security prices do not react properly for the announcement of dividends.

Furthermore, insider trading causes asymmetric information in the market and as insiders have private information, so, outsiders love to follow the insiders to buy or sell shares. Therefore, shareholders always misled because of asymmetric information and consequently positive information about dividend also became an ineffective device in the market.

As the DSE is still in the speculation and manipulation stage, so, speculators play their role in the market for a short-term period. However, it is notable that insiders, brokers, and the exchange employees are the speculators of the market. And as these informed speculators play their role in the market for short-term gain that causes dividend information ineffective.

However, ineffectiveness of dividend announcements also causes for many other reasons including companies announce dividends but they often do delay in paying dividends to shareholders, after the book closure sometimes the companies take a long time to transfer the ownership, etc. For these and many other reasons, the shareholders are always sceptical about the activities of the management and they do not trust management with full confidence. Moreover, the lower level of law enforcement in the market and ineffectiveness of the regulatory bodies also became a cause of distortion in the market.

Finally, the empirical results clearly indicate that the DSE is an inefficient market because security prices do not reflect the publicly available information. However, as the informed insiders trade in the market, so, the securities gain excess returns before the announcements. This is another indication of market inefficiency

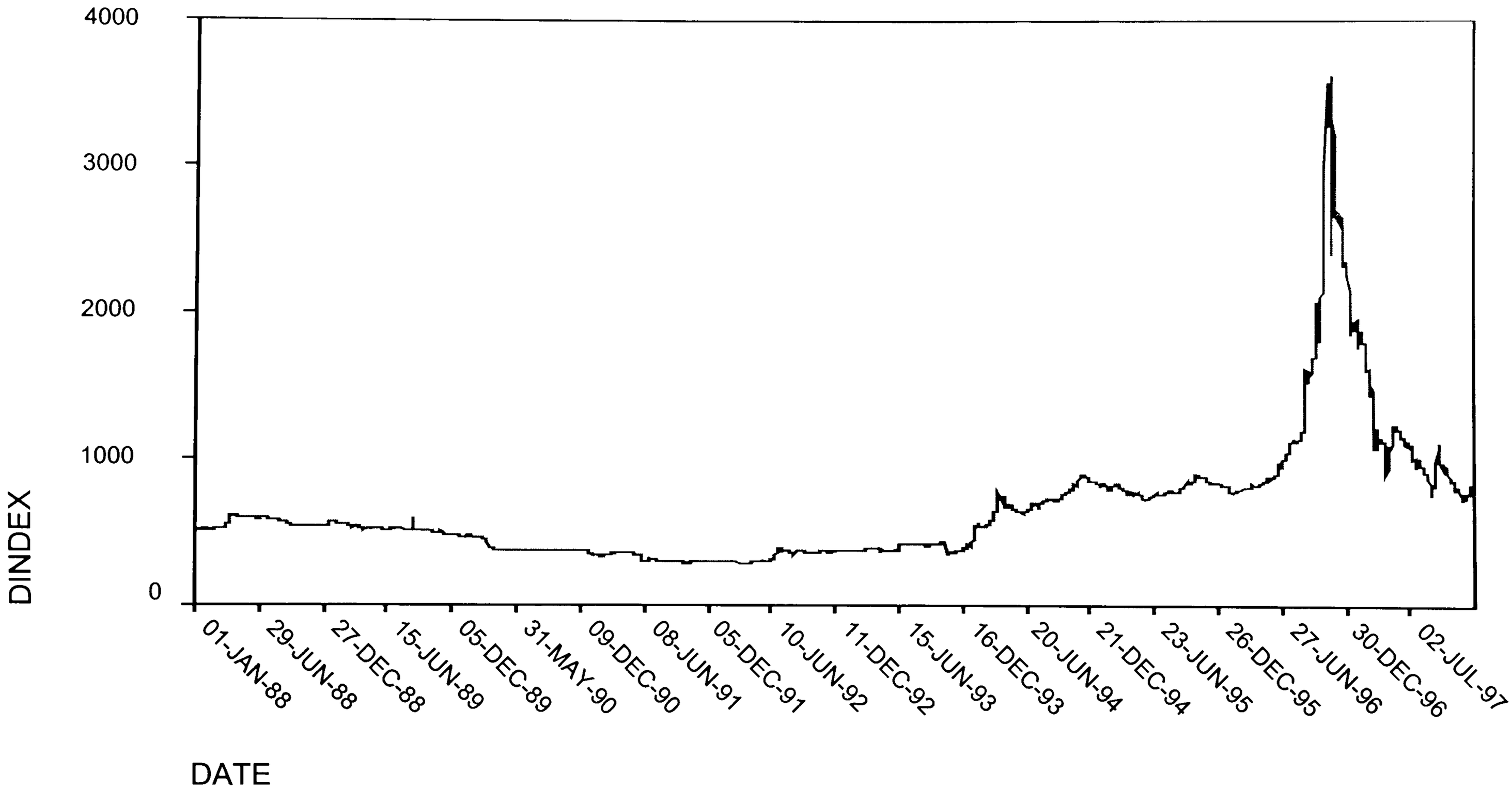
10.4. Conclusion

A vast majority of the studies found dividend announcement as a strong signalling device, which influence the security prices but the issue of the effect of dividend announcements on security prices is still inconclusive. The major objective of this chapter is to identify whether dividend announcements convey information to the market or whether investors consider announcement of dividends as a signal of firm's future prospects, i.e., to see the security price reaction to the announcement of dividends in an emerging market. Cash dividend announcements of the Dhaka Stock Exchange listed 153 non-financial companies over the period of 1988-1997 are considered for this study. The empirical section of this chapter employs a conventional event study methodology to examine the stock price reaction to the announcement of dividends. The mean abnormal returns of the observation periods and comparison periods are not significantly different from zero. These results document that there is no significant impact of dividend announcement on the security prices of the Dhaka Stock Exchange listed companies. However, these result also reject the dividend signalling hypothesis that dividend announcement does not convey any information about the companies listed on the Dhaka Stock Exchange.

The empirical results evidence that there is no significant impact of dividend announcement on the security prices of an emerging market because as insiders trade in the market, so, the information used to be adjusted with the share prices before announcement. Therefore, announcement of dividends do not carry any new information to the market. However, insider's motivated trading before and after the announcement of dividends is also an important reason for the ineffectiveness of the dividend announcements. Non-adjustment of profits to the payment of dividends is also one of the most important causes for this type of insensitive reaction of security returns to the announcement of dividends. However, asymmetric information as a result of insider trading is also a cause of this type of behaviour of security returns. Besides, as DSE is still in the speculation and manipulation stage, so, speculators play their role in the market for short-term gain. Apart from these, brokers' trading and exchange employees' trading cause dividend information ineffective because all these groups deal with short-term gain. Ineffectiveness of dividend announcements also causes for many other reasons including companies announce dividends but they often do delay in paying dividends to shareholders, after the book closure sometimes the

companies take a long time to transfer the ownership, etc. As this kind of situation is a common phenomenon in an inefficient market like the Dhaka Stock Exchange, so, positive information about dividend also becomes an ineffective device in such markets. For these and many other reasons, the shareholders are always sceptical about the activities of the management and they do not trust management with full confidence. Finally, the empirical results also clearly indicate that the emerging markets are inefficient.

Figure 10.7: Sequence Chart for Market Index over 10 Years Period (01/01/1988 – 31/12/1997)



Chapter Eleven: Summary and Conclusion

11.0. Introduction:

The objectives of this study are threefold: *firstly*, to identify the determinants of dividend policy in an emerging market; *secondly*, to identify dividend behaviour of an emerging market and to identify the the best-fit partial adjusted dividend behaviour model in an emerging market; and *thirdly*, to identify the security price reaction to the announcement of dividends in an emerging market.

The highlights of the major findings are presented in section 11.1. Section 11.2 contains a comparison of the empirical findings of this study with developed markets and with other emerging markets. The contribution of this study to the finance theories and to the existing literature is presented in section 11.3. The implications of the research, limitations of the research, suggested further research and concluding remarks are presented in sections 11.4, 11.5, 11.6 and 11.7 respectively.

11.1. Highlights of the Major Findings:

11.1.1. Empirical Phase One: Determinants of Dividend Policy in an Emerging Market

The empirical studies on dividend policy are always lagged behind the theoretical studies, therefore, this study attempts to take the dividend theories into account to identify the determinants of dividend policy in an emerging market and to minimise the gap between theoretical and empirical studies. The results of the empirical investigation strongly support agency cost theory and transaction cost theory but strongly reject signalling theory of dividend. However, the results also narrowly support tax clientele, residual, and pecking order theory of dividend.

The regression results document a positive relationship between business risk (signalling theory variable) and dividend pay-out ratio. These results indicate that dividends do neither signal about future profitability nor convey any information to the

market. Usually, the Dhaka Stock Exchange listed companies follow stable dividend policy; so, they have a little scope to adjust the profitability to the payments of dividend. Therefore, dividend contains less information and dividend becomes less informative to signal the profitability (see Chapter 8 for detail). These results also reject the information content hypothesis of Miller and Modigliani (1961) and strongly disagree with the previous empirical evidence on dividend signalling (e.g., Pettit, 1972; Bhattacharya, 1979; Aharony and Swary, 1980; Asquith and Mullins, 1983; Kane *et al.* 1984; John and Williams, 1985; and Miller and Rock, 1985).

However, the regression results document a positive relationship between the institutional shareholdings and dividend pay-out ratio but the coefficients are not highly significant. These results indicate that marginal tax payers influence the companies to pay more dividends. While, these findings support the tax clientele theory of dividend and agree with previous empirical studies (e.g., Brennan, 1970; Elton and Gruber, 1970; Long, 1978; Litzenberger and Ramaswamy, 1979; and DeAnglo and Masulis, 1980), the coefficient of institutional shareholders has become very weak predictor of tax clientele theory because institutional shareholders are not the major shareholders of the companies.

Moreover, the coefficients of insider ownership are negatively and number of common stockholders are positively related to dividend pay-out ratio. These results indicate that firms pay higher amount of dividends as monitoring and bonding package when insiders hold a lower percentage of common stock and / or greater number of common stocks held by outsiders to reduce agency cost. These results document a very high degree relationship between dividend pay-out ratio and agency cost (that arises for the conflict between stockholder and manager). These results, however, support previous empirical studies (e.g., Jensen and Meckling, 1976; Rozeff, 1982; Easterbrook, 1984; Crutchley and Hansen, 1989; Jensen *et al.* 1992; Alli *et al.* 1993; and Saxena, 1999). Moreover, the empirical results document a positive relationship between free cash flow and dividend pay-out ratio but the coefficients are not highly significant. These results

indicate that if firms have free cash flow then the firms either pay dividends or retire their debts to reduce the agency cost of free cash flow. These results, however, support Jensen's (1986) free cash flow hypothesis and previous empirical evidence. In addition, the coefficients of collateralizable assets are positively related to dividend pay-out ratio. These results, however, indicate the influence of agency cost that arises for the conflict between shareholder-bondholder on dividend pay-out ratio. These results are also consistent with the previous empirical studies (e.g., Smith and Warner, 1979; and Kalay, 1982). Therefore, these empirical evidence strongly support the influence of agency cost theory on dividend pay-out ratio. While the higher levels of collateralizable assets and the regression coefficients of collateralizable assets indicate the better protection of the bondholders in the Dhaka Stock Exchange, the insider ownership and the dispersion ownership and their regression coefficients provide clear evidence that outsider shareholders are completely unprotected in the Dhaka Stock Exchange. However, as many companies are controlled by the insiders and as lower levels of law enforcement in the market, the insiders are indeed enjoying every facility for stealing profits in the Dhaka Stock Exchange. These results, moreover, strongly support the previous study on the Dhaka Stock Exchange (Mollah *et al.* 2000).

The coefficients of debt-equity ratio negatively and size positively related to dividend pay-out ratio. These results indicate that firms with higher levels of leverage pay lower amount of dividends because of higher burden of transaction cost and large firms pay higher dividends because these firms face lower issuance cost. However, these results are consistent with previous empirical studies (e.g., Higgins, 1972; and Fama, 1974) and support a significant influence of transaction costs on dividend pay-out ratio.

In addition, the coefficients of investment opportunity variable are negatively related to dividend pay-out ratio but the relationship is not highly significant. These results indicate that the firms with higher growth generally pay lower dividends. These results are consistent with the previous empirical studies. However, these results also narrowly

support residual theory of dividend and Myers and Majluf's (1984) pecking order theory of dividend.

Finally, the empirical study identifies leverage; size, insider ownership, and collateralizable assets as the major determinants of dividend pay-out ratio in an emerging market.

11.1.2. Empirical Phase Two: Dividend Policy and Behaviour: An Empirical Investigation on the Partial Adjusted Dividend Behaviour Models

This phase of the empirical study tested the partial adjusted dividend behaviour models to identify the dividend policy and behaviour and to identify the best-fit partial adjusted dividend behaviour model in an emerging market. The empirical study begins with the Lintner's (1956) partial adjusted dividend behaviour model that the current earnings after tax and dividends paid in the previous years primarily govern dividend decisions. However, this study also tested the extended work of Paul Darling (1957), and John Brittain (1966). And this study ends at Fama and Babiak's (1968) partial adjusted dividend behaviour model. The empirical study finds Brittain's (1966) partial adjusted dividend behaviour model as the best-fit dividend behavioural model in an emerging market and concludes that dividend decision is primarily governed by cash flow for measuring the capacity of the companies to pay dividends and dividends paid in the previous years, i.e., lagged dividends. Moreover, empirical results also document strong support of Lintner's (1956) partial adjusted dividend behaviour model in the emerging markets.

11.1.3. Empirical Phase Three: Security Price Reaction to the Announcement of Dividends

This phase of the empirical study investigates the security price reaction to the announcement of dividends (cash dividends) in an emerging market. This study employs event study methodology and conducts the measurement of abnormal performance with T – test approach to compare abnormal returns of the event study periods (± 60 days, ± 30

days, ± 20 days, ± 10 days). The T-test shows that the mean abnormal returns of the observation period and comparison period are not significantly different from zero, i.e., securities do not gain abnormal returns for the announcement of dividends. However, the empirical investigation document that security price falls after the announcements of dividends and this behaviour is regardless of the nature of the announcements (i.e., good news, bad news, and no news). The empirical results evidence that there is no significant impact of dividend announcement on the security prices of an emerging market because as insiders trade in the market, so, the information used to be adjusted with the share prices before announcement. Therefore, announcement of dividends do not carry any new information to the market. However, these results also strongly reject signalling theory of dividend. Besides, one of the most important reasons for the ineffectiveness of the announcements of dividend in an emerging market is the insider's motivated trading before and after the announcement of dividends. As we have already been mentioned earlier that insiders are holding higher proportion of stocks of the DSE, so, usually insiders start to buy back the shares before the AGM for higher voting rights that causes higher demand of shares and consequently higher share returns. Moreover, insiders off load shares after the AGM that also causes higher supply of shares and consequently returns fall.

However, as we have already been mentioned in the empirical phase one of this study that the DSE listed companies follow stable dividend policy but they do not adjust profits to the payment of dividends perfectly, so, dividend does not contain accurate information and as a result security prices do not react properly for the announcement of dividends.

Moreover, insider trading causes asymmetric information in the market and as insiders have private information, so, outsiders love to follow the insiders to buy or sell shares. Therefore, shareholders always misled because of asymmetric information and

consequently positive information about dividend also became an ineffective device in the market.

As we know that the DSE is still in the speculation and manipulation stage and the speculators play their role in the market for a short-term period. However, it is notable that insiders, brokers, and the exchange employees are the speculators of the market. And as these informed speculators play their role in the market for short-term gain that causes dividend information ineffective.

However, ineffectiveness of dividend announcements also causes for many other reasons including companies announce dividends but they often do delay in paying dividends to shareholders, after the book closure sometimes the companies take a long time to transfer the ownership, etc. For these and many other reasons, the shareholders are always sceptical about the activities of the management and they do not trust management with full confidence. However, the lower level of law enforcement in the market and ineffectiveness of the regulatory bodies also became a cause of distortion in the market.

Finally, these empirical results clearly indicate that the DSE is an inefficient market because security prices do not react to the announcement of dividends.

11.2. Empirical Findings Compared to the Previous Studies:

11.2.1. Empirical Phase One: Determinants of Dividend Policy in an Emerging market

11.2.1.1. Developed Markets Studies vs. This Study

A great many of the studies have been conducted on dividend policy in the developed markets to date but a few are on the determinants of dividend policy. However, the main difference between this study and the previous empirical studies on the determinants of dividend policy is the approach. This study focused on the major dividend theories to identify the determinants of dividend policy but most of previous studies selected the variables based on the previous studies and then analyse the data to identify

the determinants of dividend policy. However, the previous studies tested the dividend theories indirectly rather than considering the theories as the basis of the studies except Alli *et al.* (1993). Although, the previous studies support dividend theories but the researchers neither took all the major dividend theories altogether into account nor tested the dividend theories directly.

The previous empirical studies conducted on determinants of dividend policy in the developed markets (e.g., Michaelsen, 1961; Gillespie, 1971; Rozeff, 1982; Gerber, 1988; Partington, 1989; Jensen *et al.* 1992; Alli *et al.* 1993; Holder *et al.* 1998; and Saxena, 1999) support all of the dividend theories. However, the empirical phase of this thesis strongly supports agency cost and transaction cost theory and narrowly supports tax clientele, residual, and pecking order theory. However, this study also strongly rejects dividend signalling theory. These results indicate the consistency between these two markets except some aspects of dividend policy.

11.2.1.2. Emerging Market Studies vs. This Study

Only two (e.g., Gerg *et al.* 1996, and Mollah *et al.* 2000) recognised study conducted on determinants of dividend policy in an emerging market until now. Gerg *et al.* (1996) selected the variables traditionally and then tested the selected variables on the Indian data and their selected variables are the proxies of transaction cost and residual theory of dividend. However, Mollah *et al.* (2000) worked only on the agency cost theory but tested the model on the Dhaka Stock Exchange data. Furthermore, Gerg *et al.* (1996) took transaction cost and residual theory into account to identify the determinants of dividend policy and Mollah *et al.* (2000) took agency cost theory into account to identify the influence of agency cost on dividend policy. In contrast, as we have already been mentioned earlier that this study took all the major dividend theories into account to identify the determinants of dividend policy. While Mollah *et al.*'s (2000) empirical study strongly supports agency cost theory, Gerg *et al.*'s (1996) empirical study does not support residual and transaction cost theory. On the other hand, the empirical part of this thesis

strongly supports agency cost and transaction cost theory but strongly rejects signalling theory of dividend. However, this study also narrowly supports tax clientele, residual and pecking order theory. Therefore, these are the evidence of complete consistency of the empirical results of this study with Mollah *et al.*'s (2000) but complete inconsistency of the empirical results of this study with Gerg *et al.*'s (1996). The main reason for the inconsistency between this study and Gerg *et al.*'s study is that Gerg *et al.* (1996) conducted their study on the selected 44 Indian textile companies but this study conducted on the Dhaka Stock Exchange listed 153 non-financial sector companies.

11.2.2. Empirical Phase Two: Dividend Policy and Behaviour in an Emerging Market

11.2.2.1. Developed Markets Studies vs. This Study

While, most of the previous studies find some difficulties in the partial adjustment model and suggested further improvement and addition to the model, e.g., Doran and Griffiths (1978) mentioned the inconsistency of the OLS estimation of the partial adjustment model, Djarraya (1980) identified the difficulty of partial adjustment model to distinguish between the coefficients, and Djarraya and Lee (1981) and Lee *et al.* (1987) mentioned partial adjustment model as an inadequate model to explain the dividend behaviour and suggested a more generalised model, but none of studies disagrees with partial adjustment models. However, the empirical investigation of Fama and Babiak (1968) identified Lintner's (1956) partial adjusted model as the best-fit model. The empirical phase of this thesis supports Lintner's (1956) partial adjustment model but identifies Brittain's (1966) model as the best-fit partial adjusted model in an emerging market. Therefore, the consistency of the empirical evidence indicate the similarity of dividend behaviours between these two markets.

11.2.2.2. Emerging Market Studies vs. This Study

Only two recognised study conducted on dividend behaviour models in emerging markets (e.g., Garg *et al.* 1996; and Mishra and Narender, 1996) until now but both the studies tested only Lintner's (1956) partial adjusted dividend behaviour model. However,

both of these studies agree that Lintner's model fit in the Indian market. In contrast, the empirical phase of this thesis tested all the partial adjusted dividend behaviour models (from Lintner, 1956 to Fama and Babiak, 1968). The empirical part of this study supports Lintner's (1956) partial adjusted dividend behaviour model but identifies Brittain's (1966) partial adjusted dividend behaviour model as the best-fit model in an emerging market. Therefore, these consistencies suggest the similarity of the empirical findings and dividend behaviours in the emerging markets.

11.2.3. Empirical Phase Three: Security Price Reaction to the Announcement of Dividends in an Emerging Market

11.2.3.1. Developed Markets Studies vs. This Study

A number of studies conducted in the developed markets on the security price reaction to the announcement of dividends. Even though the researchers used event study methodology but each and every researcher adapted separate data analysis techniques. However, the previous studies conducted on security price reaction to the announcement of dividends in the developed markets (e.g., Aharony and Swary, 1980; Asquith and Mullins, 1983; Woolridge, 1983; Fehrs *et al.* 1988; Woolridge and Ghosh, 1988; Eddy and Seifert, 1992; Dhillon and Johnson, 1994; Michaely *et al.* 1995; Abeyratna *et al.* 1996; and Impson, 1997) suggest that security price increases for increasing dividends and security prices falls for dividend cuts, i.e., announcement of dividend convey some information to the market. On the other hand, the empirical results of this study suggest that security prices decrease after the announcement of dividends in the emerging markets. This behaviour of stock returns are irrespective of the nature of announcements (i.e., good news, bad news, and no news). However, it is observed a negative relationship between the returns of observation and comparison period in all the cases. In addition, t-statistics are not highly significant either of the case, which indicate the ineffectiveness of dividend announcements to influence the security prices in the emerging markets. Therefore, the empirical phase of this study does not support that security price increases for increasing dividends and security price falls for dividend cuts. And these results obviously indicate a

great inconsistency between these two markets. However, the empirical findings of this study reject dividend signalling and information content hypothesis of Miller and Modigliani (1961) in the emerging markets, which is the complete opposite findings of the developed markets.

11.2.3.2. Emerging Market Studies vs. This Study

There is no study found on the security price reaction to the announcement of dividends in the emerging markets yet. So, there is no chance to compare the empirical findings of this study with the empirical findings of the emerging markets. Therefore, it is worthy to note that this study could be used as the benchmark for the further studies on the security price reaction to the announcement of dividends in the emerging markets. The empirical results on the security price reaction to the announcement of dividends in the emerging markets suggest that dividends do not convey any information to the market because informed traders trade in the market, so, information used to be adjusted with the share prices before announcement. Therefore, announcement of dividends do not carry any new information to the market and that's why announcement of dividends do not help to make any abnormal returns.

11.3. Contribution to the Corporate Finance Theories and to the Existing Research

11.3.1. Empirical Phase One: Determinants of Dividend Policy in an Emerging Market

11.3.1.1. Agreement with the Previous Studies:

The empirical phase one (i.e., determinants of dividend policy in an emerging market) is basically the identification of the determinants of dividend policy based on dividend theories. The empirical investigation on determinants of dividend policy mostly agrees with previous empirical findings in the developed markets except dividend signalling theory. The empirical results strongly support agency cost and transaction cost theory and narrowly support tax clientele theory, residual and pecking order theory of dividend. These results are consistent with the previous empirical studies.

11.3.1.2. Disagreement with the Previous Studies:

Despite the empirical findings agree with the previous empirical studies and support the dividend theories, this study strongly disagrees with the signalling theory of dividend. The empirical results indicate that dividends do neither signal about future profitability of the company nor convey any information to the capital market. However, the empirical results also reject the information content hypothesis of Miller and Modigliani (1961). Moreover, the empirical study disagrees with the empirical findings of Gerg *et al.* (1996). Although, this is quite unexpected that the empirical findings of this study are opposite to Gerg *et al.'s* (1996) empirical investigation but there is a very good reason behind it. Gerg *et al.* (1996) worked on 44 Indian Textile Industries, therefore, considering only Textile sector and a very small sample could be the main reason for the opposite findings.

11.3.1.3. Contribution to the Finance Theory and to the Existing Research:

Regarding the contribution of this research to the finance theory and to the existing research, there are two major contributions of this research. *Firstly*, this research strongly support agency cost theory and transaction cost theory but narrowly support tax clientele theory, residual, and pecking order theory of dividend. However, the empirical results also strongly reject dividend signalling theory. *Secondly*, this research identifies leverage, size, insider ownership, and collateralizable assets as the major determinants of dividend policy in an emerging market.

11.3.2. Empirical Phase Two: Dividend Policy and Behaviour in an Emerging Market

11.3.2.1. Agreement with the Previous Studies:

This phase of the thesis tested the partial adjusted dividend behaviour models to identify the best-fit dividend behaviour model in an emerging market. The empirical results identified Brittain's (1966) partial adjustment dividend behaviour model as the best-fit dividend behaviour model in an emerging market. While, Doran and Grifths (1978), Djarraya (1980), Djarraya and Lee (1981), and Lee *et al.* (1987) identified some problems

of partial adjustment model, Lintner's (1956) partial adjusted dividend behaviour model is mostly accepted partial adjusted dividend behaviour model until now in the developed markets and as well as in the emerging markets. Although, the empirical results of this study identified Brittain's (1966) partial adjusted model as the best-fit model, the empirical results also document strong support of Lintner's (1956) partial adjusted dividend behaviour model. Therefore, these results indicate the consistency of this study with the previous empirical studies both in the developed and emerging markets.

11.3.2.2. Contribution to the Finance Theory and to the Existing Research:

This research contributes to the finance theory and as well as to the existing research in two aspects. *Firstly*, the empirical investigation identifies Brittain's (1966) partial adjusted dividend behaviour model as the best-fit model in an emerging market. This study supports and agrees with the previous studies (e.g., Fama and Babiak; 1968; Garg *et al.* 1996; and Mishra and Narender, 1996) on partial adjusted dividend behaviour models. *Secondly*, the empirical investigation also identifies that dividend decision is primarily governed by cash flow as the capability of paying dividends and lagged dividends. However, the empirical results also strongly support Lintner's (1956) partial adjusted dividend behaviour model that dividend decision is primarily governed by the net current earnings after tax and dividends paid in the previous years, i.e., lagged dividends.

11.3.3. Empirical Phase Three: Security Price Reaction to the Announcement of Dividends in an Emerging Market

11.3.3.1. Disagreement with the Previous Empirical Studies:

This phase of the thesis tested the security price reaction to the announcement of dividends in an emerging market and this research especially took only the cash dividend announcements into account. The empirical results suggest no significant impact of dividend announcements on the security prices in an emerging market. The empirical studies are quite inconsistent with the previous empirical studies (e.g., Aharony and Swary, 1980; Asquith and Mullins, 1983; Woolridge, 1983; Fehrs *et al.* 1988; Woolridge and

Ghosh, 1988; Eddy and Seifert, 1992; Dhillon and Johnson, 1994; Michaely *et al.* 1995; Abeyratna *et al.* 1996; and Impson, 1997) that dividend announcement convey some information to the market. While these empirical findings are seem to be unacceptable but there is a strong logic behind this, i.e., as insiders trade in the market, so, the information used to be adjusted with the share prices before announcement, therefore, announcement of dividends do not carry any new information to the market. As dividend does not convey any signal to the market or dividend does not contain any information, so, that is a very good reason not to have abnormal returns for the announcement of dividends. Apart from these, as we have mentioned earlier that companies announce dividends but they often make delay in paying dividends to shareholders, after the book closure sometimes the companies take long time to transfer the ownership, etc. For these and many other reasons, the shareholders are always sceptical about the activities of the management and they do not trust management with full confidence.

11.3.3.2. Contribution to the Finance Theory and to the Existing Research:

In spite of the disagreement of the current research with the previous studies, this research contributes to the finance theory and as well as to the existing research in several aspects. *Firstly*, the empirical results indicate a negative relationship between the abnormal returns of observation period and comparison period, i.e., stock price falls after the announcement of dividends. These results indicate unexpected behaviour of security prices to the announcement of dividends in an emerging market. These results, however, indicate that security price falls irrespective of the announcements (i.e., good news, bad news, and no news) in an emerging market. *Secondly*, dividend announcement does not carry any positive information in the emerging markets. However, this behaviour of the market also proves through rejection of dividend signalling theory of dividend in empirical phase one. Therefore, it is an established contribution that dividend does not signal and carry any information to the market in an emerging economy. *Thirdly*, the empirical results also find no significant impact of dividend announcements to the security prices in an emerging market. Actually, this is the effect of rejection of signalling theory and

information content hypothesis in the emerging markets. *Fourthly*, the empirical results also suggest that emerging markets are inefficients. *Finally*, the empirical investigations of this thesis have uncovered institutional aspects of the emerging markets and behavioural aspects of the market participants, which was not identified by the previous emerging market researchers.

11.4. Implications of the Research:

As the DSE is a newly established emerging market, the regulatory system and the trading mechanism are not operating smoothly in comparison to the well equiped developed markets. However, as we hardly find empirical studies conducted on emerging markets, this study has many implications for the participants and regulators. *Firstly*, the researchers could use this study as a benchmark for further research. *Secondly,* this study will obviously be used as a source of reference for further research and the researchers will get proper guideline from this study. *Thirdly,* this study will help all the interested parties of the market such as investors, policy making and regulatory bodies, and portfolio analysts of the emerging markets by providing some directions. *Fourthly,* as the ineffectiveness of the regulatory bodies and lower levels of law enforcement are the major causes of distortions in the emerging markets, so, this study will help the regulatory bodies to notice their weaknesses and will help them to take corrective measures. Hence, it is an important issue to concentrate on the legal aspects of the emerging markets regarding information disclosure requirements, protection of outside investors' interests. This study will also provide the source of reference to the law enforcing agencies for taking proper actions at the targeted points to prevent the irregularities from the market. *Fifthly,* as already mentioned, the Dhaka Stock Exchange listed companies are the insiders controlled closely held firms, so, the outsiders are really unprotected and consequently insiders are doing most of the worst things including profit stealing, profit channelling and effectively companies are bearing higher levels of debt burden. Therefore, this study will provide some alarming information to the outsiders so that they would be careful about the insiders in the emerging markets. However, this study will also help the regulatory bodies to take

necessary steps for outsiders protection. *Sixthly*, as already mentioned earlier that because of insider trading, the information becomes ineffective in the market. However, it has also mentioned earlier that insiders, brokers, and exchange employers play in the market as the speculators and consequently that makes the uninformed investors losers and effectively uninformed investors lose confidence about the market as a whole, which is ultimately affecting the economies in the emerging markets. Therefore, this study will help the law enforcing agencies to take proper care of the market and the economy effectively. *Seventhly,* the listed companies show carelessness about the interest of shareholders and indeed because of this they are engaged with different unexpected activities, e.g., not timely holding AGM, irregularity of declaring dividends, delay to issue dividend warrants and refund warrants, etc. Therefore, this study will give some guidelines to the regulatory bodies about the activities of different associated bodies of the emerging markets so that they could be able to take proper action against the wrong doings. *Finally,* this research will explore the avenues of further research on dividend policy of an emerging market. It is also believable that this study will help the policy-making bodies, regulatory bodies, and law enforcing agencies to take proper actions and steps to save the interest of all the associated parties in the emerging markets and consequently that will guide the market towards the maturity.

11.5. Limitations of the Study:

The major limitation of the study is the exclusion of financial sector. Consideration of only ten year period and specially not incorporation of the period of 1976-87 and use of only secondary data are the most remarkable limitations. Besides these, parallel study on the different emerging markets for the strengthen empirical investigation. Among others, conduct empirical investigation only on partial adjustment behaviour models, consider only cash dividend announcements and exclusion of joint and contemporaneous announcements are remarkable limitations.

However, as already mentioned earlier that the ineffectiveness of the regulatory bodies and lower levels of law enforcement are the major causes of distortions in the emerging markets, so, it is an important issue to concentrate on the legal aspects of the emerging markets, which this research does not consider.

While the institutional aspects and behavioural aspects of the emerging markets emerged as the important issues through this research, on which this thesis does not give adequate emphasis.

Finally, this study basically concentrates on certain econometrics techniques to analyse the secondary data rather than using altenative econometrics techaniques at the same time.

11.6. Suggestions for Further Research:

It is suggested to conduct further research on dividend policy by incorporating the financial sector and considering 1976-87 period. It is also suggested to conduct further research on primary data, which will provide management and investors views about the dividend policy and behaviour, and security price reaction to the announcement of dividends in an emerging market. It is also suggested to conduct further studies on the different emerging market, which will strengthen the empirical findings of this study. It is also suggested to conduct further research by taking other dividend behaviour models, e.g., adaptive exception models, and integrated models into consideration. It is suggested to conduct further research on the announcement effect in an emerging market by considering other announcements like earnings announcement, stock dividend, rights offering, stock split, etc. However, it is also suggested to conduct further research on the security price reaction to the contemporaneous and joint announcements.

Besides, it is suggested to conduct further studies on the legal aspects of the emerging markets, which will help to identify the levels of law enforcement in the

emerging markets. However, further study on the legal aspects of emerging markets would appropriately be able to recommend the law enforcing agencies and the regulatory bodies to enforce the specific laws, which would be able to save the market from the current irregularities.

In addition, it is suggested to conduct further research in giving adequate emphasis on the institutional and behavioural aspects of the emerging markets alongside the aspects have been considered in this thesis, which will particularly be able to identify the influence of these aspects on the dividend policy and behaviour, and security price reaction to the announcement of dividends in the emerging markets. However, further study will also be able to identify whether institutional and psychological aspects are the major cause of the difference between developed and emerging markets.

Finally, it is suggested to use appropriate econometrics in the further research. It is also suggested to use alternative regression analysis techniques (e.g., system equation, optimum/equilibrium equation) and other data analysis techniques (e.g., factor analysis, discriminant analysis, and rank correlation, etc.). It is also suggested to use alternative data analysis techniques in the event study (e.g., cumulative effect of the abnormal returns, buy-and-hold strategy, comparison period return approach, regression analysis, and mean adjusted return method, etc.).

11.7. Conclusion:

The first section of this thesis was organised to state the general outline of the whole study. The first part of this section explains the overall position of Bangladeshi capital markets as the members of the emerging markets including the comparison of Bangladeshi markets with the world emerging markets and the emerging markets in Asia. However, the second part of this section provides an extensive description of the Dhaka Stock Exchange. Moreover, third part of this section describes the general research methodology of the

thesis including the justification of choosing quantitative research method and data analysis techniques.

The second section of this thesis was organised to provide the detail description of the empirical phase one (i.e., determinants of dividend policy in an emerging market). The first part of this section reviews the major dividend theories including the review of previous empirical studies for and against the dividend theories. And the second part provides the detailed explanation of the empirical results of the determinants of dividend policy of the companies listed on the Dhaka Stock Exchange. This phase of the empirical study was conducted on the dividend theories to identify the determinants of dividend policy in an emerging market. The empirical study strongly supports agency cost and transaction cost theory but narrowly supports tax clientele, residual, and pecking order theory. However, the empirical result also strongly rejects dividend signalling theory. Finally, the empirical investigation also identifies leverage, size, insider ownership, and collateralizable assets as the major determinants of dividend policy in an emerging market.

The third section of the thesis was framed to state the description of the empirical phase two (i.e., dividend policy and behaviour in an emerging market). The first part provides an extensive literature review on the major studies of dividend policy and behaviour. And the second part provides the detailed explanation of the empirical results on the partial adjustment dividend behaviour models. This phase of the empirical study conducted an empirical investigation on the partial adjustment dividend behaviour models to identify the best-fit partial adjusted dividend behaviour model. The empirical results identify Brittain's (1966) partial adjustment dividend behaviour model as the best-fit dividend behaviour model in an emerging market. The empirical results conclude that dividend decision is primarily governed by cash flow as the capabilities of paying dividends and dividends paid in the previous years, i.e., lagged dividends.

The fourth section of this thesis was formulated for the empirical phase three (i.e., security price reactions to the announcement of dividends in an emerging market). The first part of this section provides an extensive literature review on the security price reaction to the announcement of dividends. And the second part explains the empirical results of the security price reaction to the announcement of dividends in an emerging market. This phase conducted an event study methodology to identify the security price reaction to the announcement of dividend in an emerging market. The empirical study document that stock price falls after the announcement of dividends. However, the interesting thing is that the stock prices behave the same way irrespective of the announcements (i.e., good news, bad news, and no news). The empirical evidences clearly indicate that dividend announcements do not convey any information to the market. The empirical evidences also provide the support of the rejection of dividend signalling in the emerging markets, which is the same as empirical phase one. Finally, empirical results indicate that emerging markets are inefficient because security prices do not react to the announcement of dividends in these markets.

Even though many limitations, this study will open up new horizons in the area of capital market research in the emerging markets. However, it is believable that this research would be the pioneering study on this area in the emerging markets. Furthermore, obviously this is the starting point of the capital market research in the emerging markets on dividend policy and behaviour, and security price reaction to the announcement of dividends.

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Appendix 1:

1. Background and Management

The Dhaka Stock Exchange Ltd. (DSE) is an organised market for share trading of the listed companies. Today's management of the DSE differs widely from that previous to 1976. The Exchange is now managed by a council consisting 24 elected and nominated members. As per Article 105B the Management is totally separated from the council and Chief Executive Officer (CEO) is the Head of Management team who is responsible for day to day affairs of the Exchange.

The council is a policy making body while a full-time Chief Executive Officer (CEO) is looking after the overall administration. The CEO shall not be a member or in any case whatsoever be associated with a Member of the Exchange and shall not engage himself in any business, directly or indirectly, including trading or dealing in shares and securities during the period he holds the office and he cannot be terminated without the consent of the Securities and Exchange Commission (SEC).

The Exchange has undergone radical changes in terms of professionalism and transparency. The DSE is no longer a closed door organisation rather an institution with public accountability (see www.dsebd.org).

2. Legal Control

The Dhaka Stock Exchange (DSE) is registered as Public Limited Company and its activities are regulated by its Articles of Association and own rules-regulations, bye-laws alongwith the Securities and Exchange Ordinance 1969, Companies Act 1994 and Securities and Exchange Commission Act 1993 (see www.dsebd.org).

3. Members

The number of members of the Dhaka Stock Exchange at present is 195. However, provision has been made to increase the number up to 500. However, one thing is notable here that the membership of the Dhaka Stock Exchange is also open for foreigners (see www.dsebd.org).

4. Functions of the Dhaka Stock Exchange

The major functions of the Dhaka Stock Exchange are as follows:

- Listing of companies (as per listing regulations).
- Providing the market place for trading of listed securities.
- Settlement of trading (as per settlement of transaction regulations).
- Publication of daily quotation, monthly review etc.
- Monitoring the activities of listed companies (as per listing regulations) (see www.dsebd.org).

5. Policy Making Body

* The Council is responsible for policy making body.
* It consists of 24 members [Article 74 (1)]:

- 12 Councillors to be elected from members.
- One Councillor to be nominated by the ministry of Finance (Finance Division) not below the rank and status of Joint Secretary;
- One Councillor to be nominated by the Bangladesh Bank from amongst its Officers of or above the rank of General Manager;
- President of Institute of Chartered Accountants of Bangladesh, ex-officio;
- President of Federation of Bangladesh Chamber of Commerce and Industry, ex-officio;
- President of Metropolitan Chamber of Commerce and Industry, ex-officio;
- President of Dhaka Chamber of Commerce and Industry, ex-officio;
- One Councillor to be nominated by the Ministry of Industry not below the rank and status of Joint Secretary;
- One Councillor to be nominated by the Ministry of Commerce not below the rank and status of Joint Secretary;
- One Councillor to be nominated by the Ministry of Law not below the rank and status of Joint Secretary;
- President of Supreme Court Bar Association, ex-officio;
- President of Bankers/Insurance Association, ex-officio; and
- Head of the Department of Finance/Economics, Dhaka University, ex-officio (see www.dsebd.org).

6. Automation

The Dhaka Stock Exchange Ltd. now provides automated screen-based trading facilities for its members. This automation project helps the Exchange to move from an open outcry system to a computer based system. It facilitated traders to do online trading directly from their offices. The central trading engine is on Tandem, a system running 24 hrs and 7 days a week, popular for its fault tolerance reliability worldwide. All major financial system in the world is handled using Tandem platform. The application, which runs in the DSE for the traders, is called as TESA (Tandem Electronic Securities Architecture). TESA is a client server application programme developed by Indigo Technologies (India) Ltd. for Tandem Computers Ltd. The software was customised according to the DSE specification. The DSE trade will have a workstation, which runs on standard platforms like Windows 95, Windows NT etc.

The TESA Trader Workstation has a stand-alone set-up and multi-user set-up. The stand-alone set-up is one trader placing orders to the market. Whereas, in the multi-user set-up, there will be multiple traders for a single broker company placing orders to the market. In the DSE, the single user and the multi-user work on an internal Local Area Network. The DSE infrastructure also provides a trader to communicate with the Trading Engine using telephone dial-up or leased lines and does their trading activities over a Wide Area Network.

7. Trading and Settlement

Shares are bought and sold through stockbrokers who are the licensed members of the DSE. Normally, the intending client to buy or sell shares opens an account with a broker. In the DSE, buy or sale order is processed by the computerised trading system. TESA is designed to match the best buy or sale order and to confirm the deal automatically. After the trade, broker sends a contract note giving details of the transaction to the client. Trades are settled by physical delivery of securities accompanied by transfer deeds. Under the present settlement system (T+3, T+5), in case of sale, shares are delivered on the third day while payment is received on the fifth day of the trade. In case of buy, payment is made on the third day while shares are received on the fifth day. In the DSE, trading session is held daily; Saturday to Thursday, from 10.30 am to 3.00 pm.

8. Reforms in the Dhaka Stock Exchange

As a self-regulatory organisation, the DSE has initiated massive reform programmes designed to ensure the stockmarket a safer place to invest in. The identifiable reforms taken place in the Dhaka Stock Exchange are:

- The Articles of Association has been amended to ensure transparency, reliability, efficiency and professionalism;
- Management of the Exchange headed by CEO has been separated from the decision making body;
- Number of Councillors has been increased from 12 to 24 with 50 percent representative from non-brokers;
- Steps have been taken to introduce Central Depository System (CDS) within the shortest possible time;
- Chairman, Senior Vice-Chairman and Vice-Chairman are required to furnish their trading activities to the SEC every week;
- Daily transaction details are being sent to the SEC through e-mail for close monitoring;
- Relevant provisions have been amended to allow the foreigners to become members of the DSE;
- Election procedure has been amended with a provision to retire one third of Councillors every year;
- Settlement Protection Fund (SPF) is being created to protect the interest of investors;
- Exhaustive educational programme on capital market has been designed to develop the awareness of the investors an other market players;
- A panel of retired judges has been formed to settle the dispute between brokers and their clients; and
- A strong surveillance term has been formed to ensure transparency and accountability of the trading of the Dhaka Stock Exchange (Bangladesh Capital Market 1998).

9. The Dhaka Stock Exchange Organogram:

As it has mentioned earlier that the policy making body of the DSE is the council, which is headed by the Chairman of the Exchange and the chief of the management is the Chief Executive Officer. However, the line managers are the secretaries of trading,

administration, and research and monitoring of listed companies. Besides, two financial controllers (clearing, and accounts) and one IT director work in the management team parallel to the secretaries (see Figure A.1).

10. Monitoring Activities of the Dhaka Stock Exchange

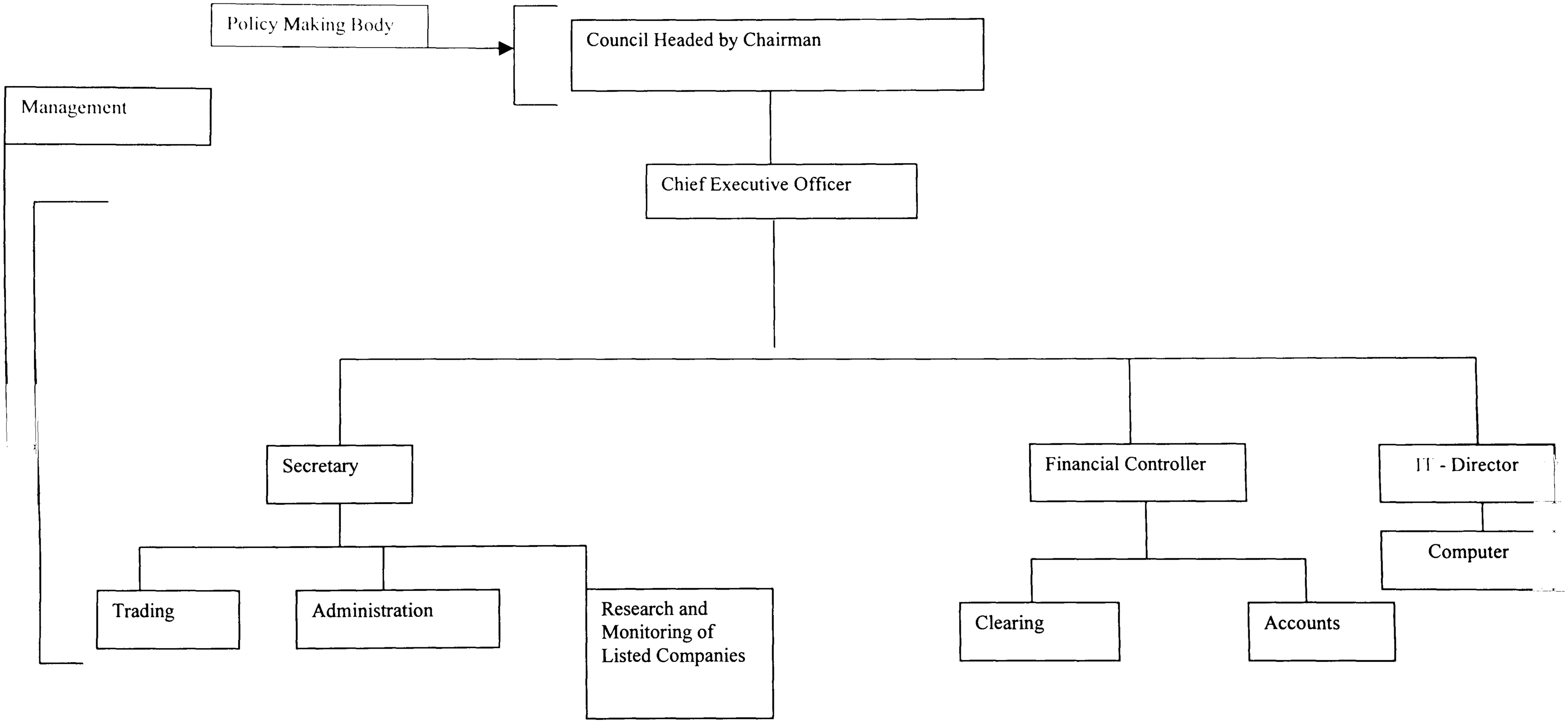
The monitoring cell acts as per Listing Regulations of the DSE for monitoring the activities of the companies such as:

- To ensure holding of the AGM in time;
- Send the Annual Reports, six months-unaudited reports as per provisions of listing regulations;
- Issue the dividend warrants, bonus share certificates within the time limit; and Utilisation of fund raised through right offer, etc (see www.dsebd.org).

11. Vision of the Dhaka Stock Exchange

- To disseminate market information to the investors in the easiest way;
- To amend listing regulations, binding the companies for more disclosure, e.g., disclose the latest status of the company by one month of the end of the financial year, and disseminating any development/sensitive news immediately etc;
- To run the Exchange professionally;
- To develop corporate broker house with all professional services;
- To modernise share management system of the listing companies by introducing Central Depository System (CDS);
- To assist the regulatory body in all respects to activate the intermediary market forces like merchant bank, private mutual funds etc;
- To strengthen the monitoring and surveillance activities;
- To enrich the research activities as well as the exchange library;
- To organise seminar, symposium to create investors awareness;
- To keep close relationship with other modern exchanges and update the knowledge level by sharing their experiences; and
- To help industrialisation through mobilising the investment from small savers (see www.dsebd.org)..

Figure A.1
The Dhaka Stock Exchange Organogram



Source: Dhaka Stock Exchange Publications