

An Empirical Study of Stock Prices' Sensitivity to Dividend Announcements

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Abstract

Dividend announcements are always a matter of concern for the investors to make investment decisions in equity of any company, as it is a major component for maximizing the wealth of shareholders. Whereas, the another component is the price fluctuation. The present study investigates the reaction of stock prices to dividend announcements by testing the semi-strong form of market efficiency. It analyzes the dividend announcement of 25 companies representing various sectors listed on the Bombay Stock Exchange for the year 2013. Expected and abnormal returns from the market model were evaluated using the Capital Asset Pricing Model and Paired t-test was employed to test the impact of dividend announcements on share prices of select companies. To test the significance the Cumulative Average Abnormal Rates were studied for the varied categories of event days. The findings suggest that there is a significant difference in the impact of dividend announcements in pre and post announcement period on the share prices of the selected companies. Hence, investors are advised to follow dividend decisions of the companies ardently in order to make wiser investment decisions.

Keywords: Bombay Stock Exchange, cumulative average abnormal rate, dividend announcements, market efficiency, paired t-test, Stock prices.

Introduction

Stock market is said to be the barometer of an economy and thus its behavior is under constant observation. Stock indices are the combination of representative factors like companies and sectors which play a vital role in growth and development of the sector. Many economic and non economic factors affect the movement of the indices and events. The growing linkages of national markets in currency, commodity and stock with world markets and existence of common players create volatility in the market averse. An understanding of the market volatility is important from the regulatory policy perspective. An investor aims to maximize the return and minimize the risk (losses) in the stock market. A company's liquidity in the present market can be determined by the dividend announcements made by the company. One of the most meaningful events for research is dividend announcements. In simple terms dividend is the cost of equity capital to equity shareholders. Equity investors look upon dividend

announcements as the market price of the shares are positively or negatively affected by the dividend announcements made by the companies.

Any announcement of changes in corporate finance variables like dividends in an uncertain economic environment are very often regarded as signals sent by the company management to be interpreted by the outside investors. Numerous models for interpreting such signals have been developed to explain the share price reaction to such announcements. One such model is Event methodology study. It has been used to investigate the semi-strong form of market efficiency. Information disclosures related to mergers and acquisitions, stock repurchase announcements, dividends and earnings announcements and macroeconomic variables etc., have been investigated to test the semi-strong form market efficiency in a number of studies. Dividend announcements, whether a surprise or an increase to an already existing dividend, are one of the most common actions firms take in order to attract new investors. These announcements by firms are usually seen as a sign of strength, suggesting that the firm has a substantial amount of excess capital.

The Efficient Market Hypothesis proposed by Fama (1965) suggests three types of market efficiency: (i) weak, (ii) semi-strong, and (iii) strong. The weak form of market efficiency proposes that current stock prices reflect all past information. It also suggests that changes in stock prices are random and no investment strategy that is based on past information can yield above average returns to the investor. This implies that technical analysis will not be rewarded with above average returns. The semi-strong form of market efficiency (informational efficiency) proposes that current stock prices incorporate material public information and changes in stock prices will only lead to unexpected public information. This suggests that fundamental analysis will not be rewarded with above average returns. Finally, the strong form of market efficiency proposes that insider trading will not be rewarded as current stock prices incorporate all material nonpublic information (Reilly and Brown, 2008). Osei (1998) suggests, market efficiency depends heavily on the analytical and interpretational abilities of those who trade in the market and the time they have and are ready to devote to obtaining and spreading price-sensitive information.

The present study provides an empirical evidence of the market's reaction to dividend announcements. It provides an opportunity to understand the markets' assessment of dividend payments, thus facilitating a better understanding of the dividend policies of Indian companies. The present study is important for investors,

regulators, and management.

Literature Review

In their study Aharony and Swary (1980) state that the market still reacts positively to the announcements even after controlling the contemporaneous earnings announcements. Asquith and Mullins (1986) investigated the first dividend announcement in the corporate history or dividend initiation after 10-year interval and find that the stock market reacts stronger to this type of extreme dividend announcements. Dasilasa (2004) examine the reaction of stock prices and trading volume on dividend announcements from the period of 2000-2004 for Greek stock markets for a sample of 350 firms listed on Athens Stock Exchange. The results of the study showed that dividend increases result in rise in stock price, dividend decreases result in decline in stock price, while steady dividend announcement brings about statistically insignificant response to dividend announcements. Docking et al. (2005) examined the sensitivity of the investor reactions to the recent direction or volatility of underlying market movements. They found that dividend change announcements elicit a greater change in stock price when the nature of the news (good or bad) goes against the grain of the recent market direction during volatile times. Hamid and Chowdhury (2005) studied the impact of dividend announcement on shareholders' value with the help of daily market-adjusted abnormal returns (MARR) and cumulative abnormal return (CAR) on a sample of 137 dividend paying companies listed on Dhaka Stock Exchange. In their study MARR is defined as an indicator of the relative daily percentage price change in the dividend paying stocks compared to the change in average market price. Whereas CAR has been defined as a measure of the investors' total return over a period starting from well before the announcement of dividend to well after the dividend announcement day. The results of the study show that MARR on the day of dividend announcement was not statistically significant which entails that the market reacts earlier than the actual announcement of dividend. On the other hand, the findings of CAR results that investors lost more value in the ex-dividend period than the value gained in the pre-dividend period. Their findings also suggest that dividend announcement does not carry information about the future earnings and cash flows of the companies.

In their study Rahman, Z. and Rahman, L. (2008) in their study of stock price behavior around ex-dividend date from DSE found an increase of stock prices. The results state that ex-dividend price increased instead of dropped in DSE that implies a clear preference for capital gains without having any focus of dividends by the stockholders Impson and Karafiath (1992) extended the analysis of stock market reactions to dividend by focusing on the different reactions to the proportion of increasing and decreasing payout ratio for both dividend increase and decrease announcements. The study tested the following two hypotheses. First, they hypothesized that

abnormal returns are positively correlated with dividend changes and negatively correlated with payout ratio changes. Second, they suggested that there are more negative abnormal returns for payout ratios increases as compared to payout ratio decreases. Bhattacharya (1979) suggested that, if stockholders have imperfect information about firms' profitability, and if there is a *tax rate differential between capital gains and dividends*, then dividends will be a surrogate for a signal of expected cash flows. John and Williams (1985) developed Bhattacharya's signaling model in the context of a tax penalty on dividends over capital gains. Corporate insiders with more valuable private information optimally distribute larger dividends and receive higher prices for their stock whenever the demand for cash by both their firm and its current stockholders exceeds its internal supply of cash.

Dividend signaling hypothesis developed by Bhattacharya (1979), Miller and Rock (1985) and John and Williams (1985) suggest that firms change their dividend payout to signal future performance. Since the management knows more about its firm than outsiders do, the only way for management to relay the information to the market is by changing their dividend payout pattern. Docking and Koch (2005) find that stock market reaction to dividend announcement is sensitive to the direction or volatility of the stock market. Easterbrook (1984) and Jensen (1986) suggest that dividend act as discipline tool to the management. The distribution of free cash flow to shareholders reduces the agency conflict by making it less likely that the management will invest in an unprofitable business. According to this line of reasoning, the stock market reacts positively to announcements of a dividend increase. Alternatively, stock market reacts negatively to firms that reduce their dividend payout on the chance that the management might invest in an unprofitable business.

Miller and Modigliani (1961) argued that in a world without any market imperfections like Taxes, transactions costs or asymmetric information, a firm's dividend policy should have no effect on its market value. An important assumption to this argument is the independence of firm's investment policy from its dividend policy. Hence, the irrelevance argument holds only if investments decisions are not influenced by management's insistence on maintaining or raising the firm's dividend. Accordingly, the market imperfection of asymmetric information is the basis to explain corporate dividend policy. The mitigation of the information asymmetries between managers and owners via unexpected changes in dividend policy is the cornerstone of dividend-signalling models. Various theories have been forwarded to explain the impact of dividend announcements on stock returns. The theoretical underpinnings for these studies were derived from Miller

and Modigliani (1961) who introduced the information content of dividend hypothesis. They explicitly suggest that managers used cash dividend announcements to signal changes in their expectation about the future prospect of a company when the markets are imperfect.

Mollah (2001) investigated whether dividend announcements conveyed information to the market or whether investors considered the announcement of dividends as a signal of firms' future prospects in Bangladesh. In his event study methodology, he did not find a significant impact of dividend announcement on the security prices and further no evidence to support the dividend-signaling hypothesis. Furthermore, he found a similarity among his samples when he found that security prices is decreasing after increasing dividends, decreasing dividends, and maintaining dividends, which he indicated it as an ineffectiveness of the announcements of dividends in Bangladesh. He mentioned that insiders are holding higher proportion of stocks, so, usually insiders start to buy back the shares before the general assembly meeting for higher voting rights, moreover, insiders off load shares after the general assembly meeting start to sell their shares and that causes higher supply of shares and consequently returns fall. Moreover, Mollah (2001) studied the determination of dividend policy in Bangladesh. He found that leverage, size, insider ownership, and collateralizable assets are the major determinants of dividend payout ratio in Bangladesh. While supporting the agency cost hypothesis and the transaction cost hypothesis, his analysis of the determination of dividend policy did not support the signalling hypothesis, the tax clientele hypothesis, the residual hypothesis, and the pecking order hypothesis.

In light of the previous researches regarding the issue, it is interesting to note that as far as dividend policy is concern, there is a group that believes high dividend increases firm value, that is, dividend has a positive impact over share price [Ogden (1994), Stevens and Jose (1989), Ariff and Finn (1986) and Lee (1995)]. On the other side there is a group that believes high dividends bring high taxes and therefore reduce firm value, that is, dividend has a negative impact over share price [Loughlin (1989) and Easton and Sinclair (1989)]. And in the centre there is a middle-of-the-road party that believes dividend policy makes no difference [Modigliani and Miller (1958), Black and Scholes (1974), Miller and Scholes (1978)]. Many empirical studies have been performed and concentrated on how the stock market reacts to the announcements. Almost all of the studies agree that dividend payout and stock market reaction move in the same direction (Pettit 1972). A great deal of work has been done in the areas of market reaction to dividend announcements and the information content of dividends hypothesis (ICH). If dividend announcements convey previously unavailable information about the future prospects of a firm, dividend cuts should result in significant excess negative returns and dividend increases should result in significant excess positive

returns e.g. Charest (1978), Ghosh and Woolridge (1988), Eades, Hess and Kim (1985). Uddin & Chaudhary (2005) in their study regarding investigation of dividend announcement impact on stock price of Dhaka market found that there was no information content in the dividend for Dhakan market stock prices and returns.

Objectives of the Study

- To study the relationship between BSE sensx and

selected stocks.

- To investigate the market reaction to dividend announcements on the Share price of the Companies and to apply the event study methodology to measure the market's reaction to the change in dividend payments on the announcement date.

Hypotheses

H ₀₁	There is no significant impact of dividend announcements on cumulative average abnormal returns of the select companies for the event window (-1 to +1) days
H ₀₂	There is no significant impact of dividend announcements on cumulative average abnormal returns of the select companies for the event window (-2 to +2) days
H ₀₃	There is no significant impact of dividend announcements on cumulative average abnormal returns of the select companies for the event window (-3 to +3)
H ₀₄	There is no significant impact of dividend announcements on cumulative average abnormal returns of the select companies for the event window (-5 to +5) days
H ₀₅	There is no significant impact of dividend announcements on cumulative average abnormal returns of the select companies for the event window (-10 to +10) days
H ₀₆	There is no significant impact of dividend announcements on cumulative average abnormal returns of the select companies for the event window (-15 to +15) days
H ₀₇	There is no significant impact of dividend announcements on cumulative average abnormal returns of the select companies for the event window (-20 to +20) days
H ₀₈	There is no significant impact of dividend announcements on cumulative average abnormal returns of the select companies for the event window (-25 to +25) days
H ₀₉	There is no significant impact of dividend announcements on cumulative average returns of the select companies for the event window (-30 to +30) days

Methodology

The Study

The present study is an attempt to study the relationship between BSE Sensex and stock of selected 25 companies like which have declared dividends in the selected year i.e., 2013. In the semi-strong form of market efficiency we investigated stock prices (returns) around dividend announcements for the selected stocks.

Data Collection

Monthly, weekly or daily data is generally used by the researchers to study the impact of price sensitive information of stock prices. However, weekly or monthly data fails to show the exact time of adjustment of stock prices to the new information. In the present study we have used daily adjusted closing stock prices to compute returns. Data for the study is collected for a period 30 trading days before, 30 trading days after and the day of announcement, i.e. day 0 being the day of announcement

of dividend in the month of October, 2013 for the stocks of selected companies. Data for the same period is collected for BSE Sensex. Abnormal returns have been calculated for the aforesaid period. To study the Beta coefficient of systematic risk, 250 days' data of daily closing share prices of the select companies was collected.

Data Analysis

The study follows event study methodology to assess the impact of dividend announcements on the stock returns of the target firms. The use of this methodology involves a series of steps like identifying the date of announcement of dividend, estimating the normal(expected/predicted) returns, measuring the Abnormal returns and finally, determining the statistical significance of the Abnormal returns by following appropriate testing procedure. The parameters of the market model like alpha and beta based on returns of stock and market index in the estimation period are first estimated, and then expected returns on the stock are calculated based on the market model. Each security return is divided into two parts i.e. those returns which

can be attributed to market movement and those which cannot be attributed to market movement but to dividend announcement. The stock price responses to the dividend announcement or the event are measured by eliminating the market's influence on stock's observed rate of return.

In our analysis the market model measures the stock returns related to the movement of the market. The market model is based on the fact that the most important factor affecting the stock returns is market factor and it is captured in the market model in the form of beta. It is a simple model to analyse the risk component of the stocks in terms of systematic and unsystematic risk. Thus the market model relates the return on any stock or portfolio of securities to the return on the market in a linear fashion. Model applied for the analysis is CAPM for expected rate of return for selected stocks.

Expected Return is calculated as:

$$E(R) = E(R_{it}) = \alpha_i + \beta_i R_{mt} + \varepsilon$$

$$AR_{it} = \varepsilon_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

$$AAR_t = \frac{\sum_{i=1}^N AR_{it}}{N}$$

$$CAAR = \sum_{i=1}^T AAR_t$$

Where, E(R) = Expected Returns;

AR_{it} = Abnormal Returns;

□ = Error term;

R_{it} = Actual Returns;

AAR = Average Abnormal Returns;

CAAR = Cumulative Average Abnormal Returns

Finally hypotheses were tested by using paired t tests for varied event windows viz., (-1 to +1), (-2 to +2), (-3 to +3), (-5 to 5), (-10 to +10), (-15 to +15), (-20 to +20), (-25 to +25), and (-30 to +30) days.

Event Day	Average Abnormal Return (AAR)	Cumulative AAR	Event Day	Average Abnormal Return AAR	Cumulative AAR
30	0.639269	15.94457	-1	-0.42041	5.187584
29	-0.36821	15.3053	-2	-0.53775	5.607993
28	0.541983	15.67351	-3	-0.12569	6.145744
27	-0.10797	15.13153	-4	0.726036	6.271435
26	0.564093	15.2395	-5	-0.03381	5.5454
25	-0.19983	14.6754	-6	-0.02823	5.579208
24	1.020519	14.87523	-7	0.233765	5.607442
23	-0.65902	13.85471	-8	0.81231	5.373678
22	0.232918	14.51373	-9	-0.33276	4.561368
21	-0.26107	14.28081	-10	-0.15845	4.894131
20	0.975833	14.54188	-11	0.780394	5.052584
19	-0.32821	13.56605	-12	-0.74683	4.27219
18	0.991045	13.89425	-13	0.10924	5.019023
17	1.008826	12.90321	-14	0.399076	4.909783
16	-0.23985	11.89438	-15	0.091821	4.510707
15	0.704431	12.13423	-16	0.065768	4.418886
14	0.844283	11.4298	-17	0.789535	4.353118
13	-0.33162	10.58552	-18	-0.91757	3.563583
12	1.639396	10.91714	-19	0.333258	4.481153

11	0.391262	9.277742	-20	1.003697	4.147895
10	-0.60992	8.88648	-21	0.253208	3.144198
9	0.285756	9.496395	-22	0.194559	2.89099
8	-0.25091	9.210639	-23	0.069469	2.696432
7	-0.03472	9.461552	-24	0.362165	2.626962
6	0.722319	9.49627	-25	1.043119	2.264797
5	0.651762	8.773951	-26	-0.21604	1.221678
4	-0.14666	8.122189	-27	0.023978	1.43772
3	1.227081	8.268849	-28	1.297315	1.413743
2	0.106335	7.041768	-29	-0.19545	0.116428
1	0.919348	6.935433	-30	0.311878	0.311878

Hypothesis Testing:

EVENT WINDOW	CAAR	Average CAAR	Standard Deviation	Standard Error	t-values	p-values	Result
(-1;+1)	18.13 91	6.0464	0.8743	0.5048	- 8.090 0	0.000	H ₀₁ Rejected
(-2;+2)	30.78 89	6.1578	0.8139	0.3640	- 6.040 18	0.104	H ₀₂ Rejected
(-3;+3)	45.20 35	6.4576	1.0390	0.3927	- 2.591 47	0.122	H ₀₃ Rejected
(-5;+5)	73.91 64	6.7197	1.2135	0.3659	- 4.306 75	0.012	H ₀₄ Rejected
(-10;+10)	146.4 836	6.9754	1.7252	0.3765	- 15.43 59	0.000	H ₀₅ Rejected
(-15;+15)	224.5 923	7.2449	2.3294	0.4184	- 13.00 89	0.000	H ₀₆ Rejected
(-20;+20)	312.3 567	7.6185	3.1434	0.4909	- 13.79 14	0.000	H ₀₇ Rejected
(-25; +25)	398.1 800	7.80745	3.864894	0.541193	- 19.76 04	0.000	H ₀₈ Rejected
(-30; +30)	479.9 758	7.868456	4.618779	0.591374	- 30.23 65	0.000	H ₀₉ Rejected

It was identified that almost all of 9 hypotheses were rejected as P-Values were found to be significant for all of the selected event windows viz. (-1 - +1) to (-30 - +30). There were significant impacts of dividend announcements on cumulative average abnormal returns of the select companies for the event windows; (-1 to +1), (-2 to +2), (-3 to +3), (-5 to 5), (-10 to +10), (-15 to +15), (-20 to +20), (-25 to +25), and (-30 to +30) days.

Conclusion

Dividend as the main method of distributing cash to shareholders has received considerable prior attention in the finance literature. Lintner (1956) suggests that firms prefer to smooth their dividend and reluctant to change their payout policy. The management is reluctant to cut dividend because it might send negative signal to investor and reluctant to increase payout for fear that it might not sustainable in the future. Following this, many empirical studies have been performed and concentrated on how the stock market reacts to the announcements. Almost all of the studies agree that dividend payout and stock market reaction move in the same direction. That means stock market react positively on dividend increase announcement and negatively on dividend decrease announcement. Two of the most widely discussed hypotheses on the stock market behavior on dividend announcement are the information signaling hypothesis and the free cash flow hypothesis.

Mansor and Subramaniam (1992) conducted a study to examine the effect of dividend and earnings announcements on share prices using a weekly data. A sub-sample was created where they looked at dividend increase, dividend decrease, earning increase and earning decrease. Their results showed that dividend and earning increase is associated with positive effects whereas dividend and earning decrease lead to negative reactions. They then created a new sample by further categorizing the original sample into four sub-samples: dividend and earning increase; dividend and earning decrease; dividend increase but earning decrease; and dividend decrease but earning increase. From these new sub-samples, Mansor and Subramaniam found that none of the abnormal returns provide a significant effect when the dividend and earning changes are in opposite direction.

It was thus concluded that the dividend announcements exhibit significant impact over the share prices' fluctuations of the select companies over the varied categories of event windows. Thus, investors should consider the dividend announcement information while making the investment decisions for the respective companies.

As this study provides a detailed analysis of dividend

announcement impact on stock prices, it can be helpful for investors and investment managers in understanding the behavior of market with regard to dividend announcement. This study can be further expanded in future in other areas like impact of merger/acquisitions, stock splits, stock repurchase and their impact on stock prices.

References

- Aharony, J. and Swary, I. (1980). Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis. *Journal of Finance*, 35(1), 1-12.
- Ariff, M. and Finn, F. J., (1986) "Announcement Effect and Market Efficiency in a Thin Market: An Empirical Application to the Singapore Equity Market", *Asia Pacific Journal of Management*, Vol. 6, 243-267.
- Asquith, P. and Mullins, J. R. D. (1983). The Impact of Initiating Dividend Payments on Shareholders' Wealth. *Journal of Business*, 56, 77-96.
- Basu, Sanjoy (1977). Investment Performance of Common Stocks in Relation to their Price Earnings Ratios: A test of the Efficient Market Hypothesis. *Journal of Finance*, 32, 663-82.
- Below, S.D. and Johnson, K.H. (1996). An Analysis of Shareholder Reaction to Dividend Announcements in Bull and Bear Markets. *Journal of Financial and Strategic Decisions*, 9(3), 15-26.
- Bhattacharya, S. (1979). Imperfect information, dividend policy, and the bird in the hand fallacy. *Bell Journal of Economics* 10(1): 259-270.
- Black, F. and Sholes, M., (1974) "The Effect of Dividend Yield and Dividend Policy on Common Stock Prices and returns", *Journal of Financial Economics*, Vol. 1, 1974, 1-22.
- Brown, L. D., and M. S. Rozeff.(1978). "The Superiority of Analysts' Forecasts as Measure of Expectations: Evidence from Earnings", *Journal of Finance*. 33. 1-6,
- Charest, G.,(1978). "Dividend Information, Stock Returns and Market Efficiency-II", *Journal of Financial Economics*, pp.297-330.
- Dasilasa, A. (2004). Stock market reaction to dividend announcements: Evidence from the Greek stock market. Department of Accounting and Finance, University of Macedonia, Thessaloniki, Greece.
- Docking, D.S. and P.D. Koch. (2005). Sensitivity of investor reaction to market direction and volatility: Dividend change announcements. *Journal of Financial Research*, 28(1): 21-40.
- Eades, K.M., P.S. Hess and E.H. Kim. (1985). "Market Rationality and Dividend Announcements," *Journal of Financial Economics*, pp.581-604
- Easterbrook, F. (1984). Two Agency-Cost Explanations of

- Dividends. *American Economic Review*, 74,650-659.
- Easton, S.A. and Sinclair, N. a., (1989), "The impact of Unexpected Earnings and Dividends on abnormal Returns to Equity", *Accounting & Finance*, 29:1-19.
- Fried, D., and D. Givoly.(1982). "Financial Analysts' Forecast of Earnings: A Better Surrogate for Market Expectations." *Journal of Accounting and Economics*, 85-108.
- Fukuda, A. 2000. Dividend changes and earnings performance in Japan. *Pacific-Basin Finance Journal* 8: 53–66
- Ghosh, C. and R. Woolridge, (1988). "An Analysis of Shareholder Reaction, Reaction to Dividend Cuts and Omissions," *Journal of Financial Research*, Winter 1988, 281-294.
- Impson, C. M. (1997). Market Reaction to dividend Decrease Announcements: Public Utilities vs. Unregulated Industrial Firms. *The Journal of Financial Research*, 20,407-422.
- Impson, C. M. and Karafiath, I. (1992). A Note on the Stock Market Reaction to Dividend Announcements. *The Financial Review*, 12(2), 259-271.
- John, K. and J. Williams. (1985). Dividends, dilution, and taxes: A signaling equilibrium. *Journal of Finance* 40(4): 1053–1070.
- Lintner, J. (1956). Distribution and incomes of corporations among dividends, retained earnings and taxes. *American Economic Review* 46 (2): 97– 113.
- Loughlin P. H., (1982), "The Effect of Dividend policy on Changes in Stockholders' Wealth", A PhD Thesis, Graduate School of Saint Louis University, USA
- Mansor, M, I. and Subramaniam, V. (1992). The Effects of Dividends and Earnings Announcements on Stock Prices in the Malaysian Stock Market. *Malaysian Journal of Economic Studies*, 29(1), 35-49.
- Michaely, R., Thaler, R. and Womack, K. (1995). Price Reactions to Dividend Initiations and Omissions: Overreaction or Drift? *Journal of Finance*, 50, 573-608.
- Miller, M. H. and Modigliani, E (1961). Dividend Policy, Growth and the Valuation of Shares. *Journal of Business*, 34(4), 411-433.
- Miller, M. H., and K. Rock. 1985. Dividend policy under asymmetric information, *Journal of Finance* 40 (4): 1031–1051
- Miller, M. H., and Modigliani, F., (1961), "Dividend Policy, Growth and the Valuation of Shares", *The Journal of Business*, Vol. 34, 411-433
- Miller, M. H., and Scholes, M. S. (1978), "Dividends and Taxes". *Journal of Financial Economics* 6(4): 333-364.
- Miller, M., "Can Management Use Dividends to Influence the Value of the Firm?" *Issues in Corporate Finance*: Stern Stewart Putnam and Macklis Ltd., New York, 1980, pp.136-140.
- Miller, M., and F. Modigliani. (1961). "Dividend Policy and the Valuation of Shares," *Journal of Business*, 411-433.
- Modigliani, Franco, and Merton Miller, (1958), The Cost of Capital, Corporation Finance and the Theory of Investment, *American Economic Review* 48, 261-297.
- Mollah, A., 2001, 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. Business School. Leeds, UK, University of Leeds: 284.
- Ogden, J. P., (1994), "A dividend Payment Effect in Stock Returns", *Financial Review*, 29: 345-369.
- Osei, K. (1998). Analysis of Factors Affecting the Development of an Emerging Capital Market: The Case of the Ghana Stock Market. African Economic Research Consortium. Research Paper, No. 76.
- Pettit, R.R. 1972. Dividend announcements, security performance and capital market efficiency. *Journal of Finance* 27(5): 993–1007.
- Rahman, Z. and Rahman, L. (2008). " Stock Price Behavior Around Ex-dividend Day: Evidence from Dhaka stock Exchange", *Journal of Business Administration*, 34, 127-144
- Reilly, F.K., and Brown, K.C. (2006). Investment Analysis and Portfolio Management, 8th Edition, South Western Publishing Company.
- Stevens, J. L. and Jose, M. L., (1992), "The Effect of Dividend payout, Stability, and Smoothing on Firm Value", *Journal of Accounting Auditing & Finance*, 7, 195-213.
- Watts. R. (1978). "Systematic 'Abnormal' Returns after Quarterly Earnings Announcements." *Journal of Financial Economics*. 6 (3): 127-150.
- Yoon, P. S. and Starks, L. (1995). Signaling, Investment Opportunities and Dividend Announcements; *The Review of Financial Studies*, 8: 995-1018.