Rajagiri Management Journal
Volume 10, Issue 2, December 2016

Cumulative Abnormal Return and Dividend Announcement

Jubna Kuchal[1] and Shijin Shanthakumar[2]

Abstract

Dividend changes pass on information about the firm to the market which makes it complex to understand the dividend policy of the firm. Information content hypothesis explains the theory behind dividend decisions. However, very few studies have examined the effect of adverse economic conditions on information content hypothesis. The present study investigates the role of change in dividend under both adverse and favorable market conditions. Using the data of S&P CNX 500 companies the study examines the role of dividend yield in explaining cumulative abnormal return over a period of seven years. Using event methodology, the study investigated whether information content in dividend policy decisions is affected by adverse market conditions at firm level and market level. The study found that there is a signaling effect of cumulative abnormal return surrounding the dividend announcement. Testing of the dividend signaling hypothesis also proved that Indian market is not efficient in its semi -strong form.

Key Words: Dividend policy, Signaling hypothesis, Market Efficiency

1. Introduction

Dividend policy has been considered as one of the most crucial decisions faced by financial managers of every organization. It describes the decision to pay

[1] Scholar in Commerce at School of Management, Pondicherry University
[2] Assistant Professor in Finance at Department of Commerce, School of Management Pondicherry University

out earnings or to retain them for reinvestment. Dividend policies play a crucial role in maintaining the company's asset level and to finance investment opportunities. In the same sense dividend policy affect shareholders wealth and long - term growth of the firm. The changes in dividend pass on the information about the firm to the market which makes it complex to understand the dividend policy of the firm. The stock market may fall or rise on the basis of this information .Generally, good news about dividend i.e., dividend increase or dividend initiation will result in the rise of stock price and bad news about dividend i.e., a dividend cut or dividend decrease will reduce the stock price. The information content of dividend is playing a good role in explaining the theory behind dividend decisions. According to Fama (1970), efficient market hypothesis deals with all available information including public and private information which are reflected in the stock price. Further, it assumes that all investors have the same information about the market. Dividend announcement is considered as a public announcement and all public announcements will effect the stock price. The studies in this field began to test its effect on the stock market. According to Bhattacharya (1979) and Miller and Rock (1985), dividend announcement gives a signal to the market and is also relevant for deciding the efficiency of the market. Dividend signaling hypothesis signals the market which results in stock price fluctuation revealing the future earnings of the firm. Since earnings and dividend are related the dividend increase shows that the firms have good earnings and cash flow. Further, the dividend signaling also reveals about the managers optimism about the future of the firm.

The stock market may respond to each and every news and event of the economy. Stock market behavior depends on investor's expectation about the market. Investors take the decision on the basis of market behavior. Market and firm- level news create an abnormal return in the market. An event study is mainly adopted to measure the cumulative abnormal return related to firm -level and market level news. In addition, the event study also explains market efficiency, this will also be helpful to predict how fast stock price may respond to the news and event. The cumulative abnormal return differs individually according to the firm depending on how the market perceives it as good or bad news. Earnings announcement, dividend announcement, merger, and acquisition, IPO etc are the firm level news and the events create an abnormal return in the market. Corporate tax rate, GDP, inflation, interest rate, government policies etc are the market level news that affects the firm.

Zhian et al (2012) argue that better macroeconomic information would be positively correlated with the abnormal return at the time of merger and acquisition announcement. Dhanani (2005) on the basis of managerial analysis investigated the importance of the various theories of dividend policy for UK companies. Dhanani (2005) found that the financial leverage is an important factor for financial flexibility in capital structure decision and information asymmetry. In an emerging market like India semi-strong form of efficiency is tested in many studies. Mandal et. al. (2010) showed that Indian stock market is efficient in its semi-strong form with respect to both the events, dividend initiation and dividend omission. Moreover, Mishra (2005) found that the Indian stock market have semi- strong form efficiency related to the bonus issue. The study found significant abnormal return related to bonus issue in the period of 1998 to 2004.

However, no research has, to date, examined firm level and market level effect of cumulative abnormal return around dividend announcement of Indian companies. The study has taken 500 companies at the initial stage but in the last stage of analysis, we have 253 companies. While taking dividend announcement, events consisting of mergers and acquisitions were removed from the data. In addition, the study omitted interim announcement and considered the final dividend announcement for the application.

The market efficiency tested on a firm level of 253 companies over 7 years was difficult to interpret individually. So the study had to show the top 3 companies with a highest abnormal return and smallest abnormal return for each year. In addition, the study also showed the market efficiency of companies in its aggregate level for all the companies.

2. Theoretical and empirical background

The stock prices are very sensitive to the information about any announcement about the stock split, dividend changes, merger or any other announcement. The market may behave negatively in the case of a dividend cut off and positively for a dividend increase. Dividends give the signal to the market and it reveals the managers optimism about the future of the firm under the assumptions of asymmetrical information of the firms' profitability and higher tax rate for dividend in comparison to capital gains. Bhattacharya (1979) showed that dividends function as a signal of expected cash flows. With similar assumptions Miller and Rock (1985) found that contrary to the common belief that when the

information asymmetry on announcement will last for a short time once the truth is known but cannot be guaranteed. Alternatively, the study argues that once we consider the possibility of trading rather than mere owning of stocks as specified in standard models, the consistency of full information, optimum investment and dividend policies will not happen. Pettit (1972) examined dividend announcement, security performance, and capital market efficiency by using 625 New York Stock Exchange firms' dividend announcement data. The study found that dividend announcement conveys significantly more information compared to the earnings announcement. It also found that market participant' makes use of information implicit in the announcement for changes in dividend payments and the information implicit in the announcement was reflected in the security prices.

Gurgul (2003) examined stock price and trade volume reaction related to dividend changes in the Austrian market. The study found that dividend increases induce a significant positive reaction in stock prices, whereas announced dividend decreases lead to a significant fall in stock prices. In constant dividend, there was an unchanged stock price. And in the case of trading volume, a constant dividend announcement has increasing trading volume.

Dasilas et.al (2011) examines the stock market reaction to dividend announcement in Greek stock market. The Greek stock market has a significant institutional difference when compared to other capital markets. The dividends in Greece are paid on a yearly basis, and there is no tax imposed on dividends. Hence, there is an information asymmetry between management and shareholders. In addition one more feature in Greek stock market is the mandatory distribution of a minimum cash dividend to shareholders. The data used for the study are daily closing prices and trading volume data for the period of 2000-2004. The study found that dividend changes announcement will affect the stock price and trading volume. Dividend yield and percentage of dividend change are the main determinants of the abnormal share price behavior around dividend change announcements.

Studies in the area of Information content hypothesis mainly focused on the impact of dividend announcement on stock prices. Further, it analyzed the factors which explain the change in the share prices owing to the announcement. However, very few studies have tried to explain the information content in dividend announcement. An exception to this is Bozos et al. (2011) which studies

the information content in the dividend announcement during the economic adversity. Bozos et.al (2011) considered economic recession period 2007 to 2010 for checking dividend signaling under economic adversity by using evidence from the London Stock Exchange (LSE). The study collected 991 samples of financial dividend announcement of UK companies listed on the LSE using share price, EPS, volume and ownership structure data. The study found that there is a positive and significant relationship between stock return and dividend announcement. In the case of an adverse economic condition, the information content of dividend showed a significant and negative relation. The study also found, in the period of growth and stability, dividend carried less information, and in the case of economic adversity, the information available was much greater.

This study tries to explain the information content provided by the dividend announcement during the same period when the effect of global meltdown had its presence in Indian market. The impact of the global meltdown in emerging markets was much slower due to which a longer time period is chosen.

3. Data and Methodology

The study covers a period of seven years ranging from 2005 to 2011 of S&P CNX 500 companies. The data is taken from the Center for Monitoring Indian Economy (CMIE) database and National Stock Exchange. S&P CNX 500 is the India's first broad- based benchmark of Indian stock market. The total market capitalization of S&P CNX 500 was 96%. It includes 72 industry indices and it covers large, medium and small- cap companies.

Methodology

The study adopted event methodology to capture the cumulative abnormal return surrounding the dividend announcement. The study calculated abnormal return as the difference between actual return and expected return. Expected return is calculated by using Sharpe (1964) CAPM model. In order to capture firm and market level efficiency the study considered 60- day event window surrounding dividend announcement, but in the calculation of return, one observation is lost and further one observation is lost while arriving at CAR which reduces the event window to (-28 to +28) for determining dividend announcement effect. Thus, the dividend announcement day is considered as the event day which is taken as zero. The study used the equilibrium model

with 91 days Treasury bill as risk- free rate to arrive at the expected return. Following are the steps used for event methodology calculation.

The abnormal return is calculated as the difference between actual return and expected return. The abnormal return is calculated as follows

$$AR_{jt} = R_{jt} - ER_{jt}$$

Where AR_{jt} =Abnormal return

R_{jt} =Actual return

ER_{jt} =Expected return

The individual daily return is calculated as

$$R_{jt} = (P_j - P_{j-t}) \div P_{j-t}$$

Where R_{jt} =Individual daily return.

P_j =Today price

P_{j-t} = Yesterday price

Expected return is calculated by using Sharpe (1964) CAPM model

$$R_{jt} = R_f + \beta(R_m - R_f)$$

Where R_m denotes the market return (S&P CNX 500) and R_f is the risk-free return (91 days Treasury bill)

Then the study calculates AAR (Average Abnormal return) as in Bozos et.al (2011) as follows.

$$AAR_t = 1/N \Sigma AR_{jt}$$

AAR_t =Average Abnormal return

N=Total no of observation

AR_{jt} =abnormal return

After arriving at AAR the Cumulative Abnormal return (CAR) is calculated, Then Average Cumulative Abnormal Return is calculated (ACAR) as

$$ACAR_t = 1/N \sum_{j=1}^{N} CAR_{jt}$$

$ACAR_t$ =Average Cumulative Abnormal Return

N=Total no of observations

CAR_{jt} = cumulative abnormal return.

4. Empirical result

Firm Level Market Efficiency

The study calculated the CAR surrounding the dividend announcement for a period of seven years for companies listed under S&P CNX 500 companies. The number of companies chosen for the study varies according to the announcement made in the given year. For the year 2005, the list included 47 companies, for 2006, it was 186, 2007-186, 2008-252, 2009-179, 2010-249 and the year 2011 had 108 companies. The firm level analysis of all the companies cannot be reported hence three companies which have reported the largest and lowest CAR have been shown below.

Fig. 4.1: Dividend announcement effect of companies with smallest CAR in 2005

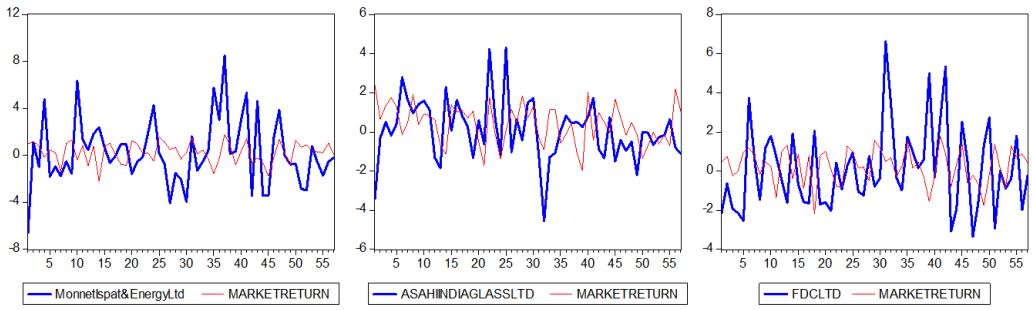


Figure 4.1 shows Monnet Ispat & Energy Ltd, Asahi India Glass Ltd, and FDCL limited sorted on the basis of smallest CAR. In the case of Monnet Ispat & Energy Ltd, Asahi India Glass Ltd, and FDC Ltd the companies were having more abnormal return surrounding the announcement day which has an event window of 28 days following pre and post announcement. Prior to the dividend announcement very less information is leaked to the market as shown in the graph with high fluctuations during the announcement day. However, one interesting feature is that all the companies have shown high fluctuation in the CAR during the post - announcement period. While Monnet Ispat and FDCL had a positive CAR in the post- announcement period, Asahi India Glass Ltd. had negative fluctuation during the post- announcement. This shows that in the case of

Asahi India Glass Ltd the market has reacted to the dividend announcement negatively.

Fig. 4.2: Dividend announcement effect of companies with highest CAR in 2005

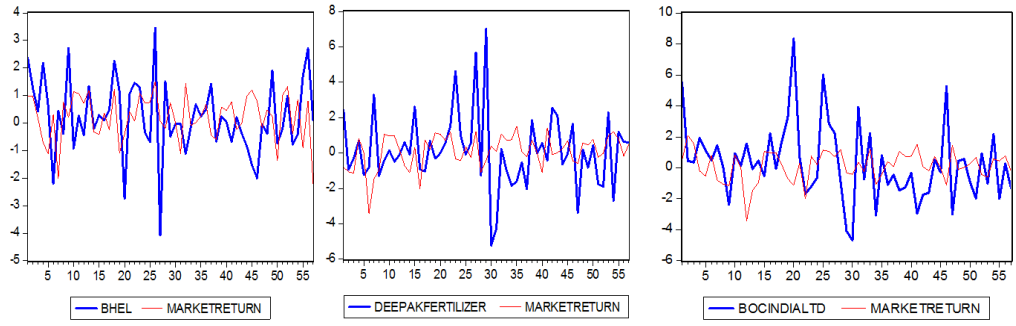
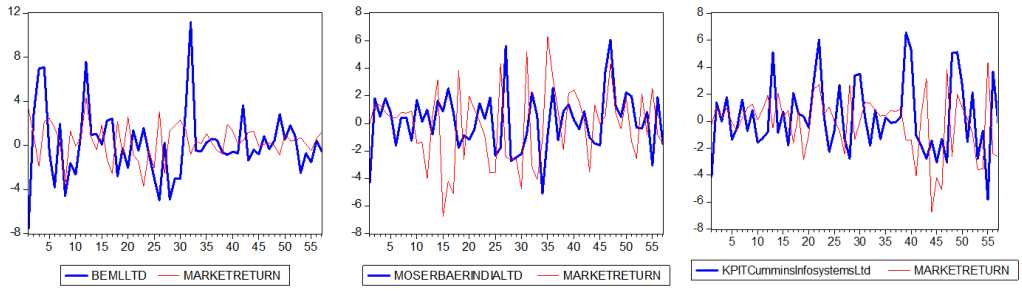


Figure 4.2 shows Bharat Heavy Electricals Ltd, Deepak Fertilisers & Petrochemicals Corp. Ltd, and B O C India Ltd sorted on the basis of highest CAR. BHEL showed some fluctuation in the CAR before the announcement day whereas the change is very evident in Deepak fertilizers and BOC India limited. Both the companies had high CAR prior to the announcement followed by the decrease in the CAR during post announcement. This shows that the information about the announcement is leaked into the market prior to the announcement day.

Fig. 4.3: Dividend announcement effect of companies with smallest CAR in 2006



In the case of BEML Ltd, Moser Baer India Ltd, and KPIT and Cummins Infosystems Ltd shown in Fig 4.3 the companies have less CAR during the

announcement day. Although the companies have very less fluctuation in the CAR on the day of the announcement, the CAR shows a much bigger fluctuation during the post and pre -announcement period. Prior to the announcement day, information is leaked to the market showing evidence of semi-strong form efficiency. These companies have a small abnormal return on the dividend announcement day, further, it also denotes that these companies have less dividend signaling effect.

Fig. 4.4: Dividend announcement effect of companies with highest CAR in 2006

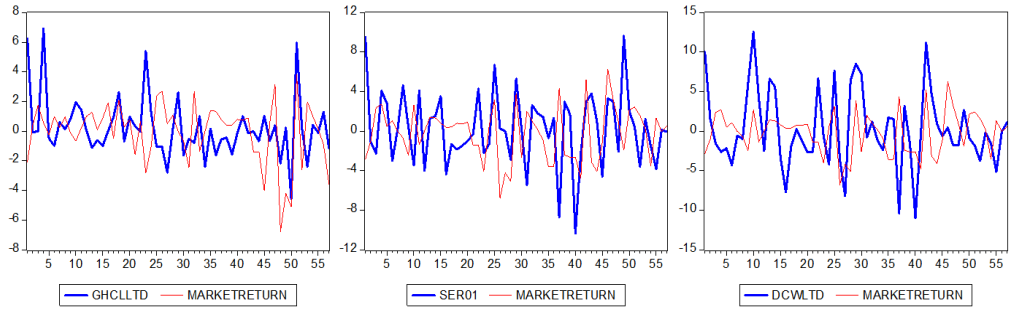


Figure 4.4 shows the top three companies namely; GHCL Ltd, Hindustan Oil Exploration Co Ltd, DCW Ltd. sorted on the basis of highest cumulative return. In the case of G H C L Ltd, Hindustan Oil Exploration Co Ltd, and D C W Ltd. have an abnormal return on the announcement day. Prior to the announcement and after the announcement also show high return as signs of market inefficiency.

Fig. 4.5: Dividend announcement effect of companies with smallest CAR in 2007

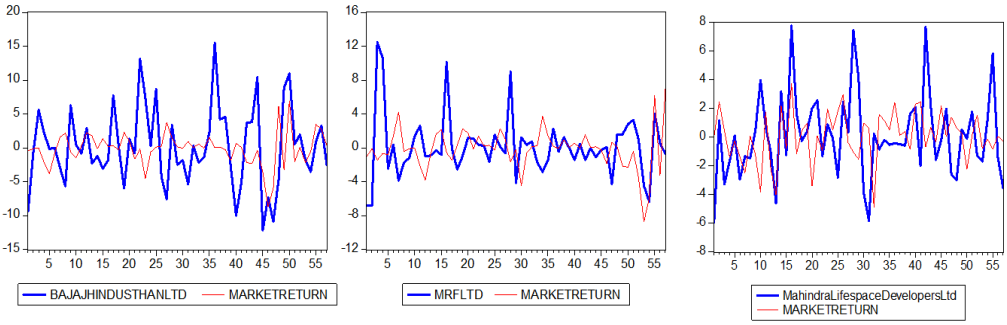


Figure 4.5 shows the top three companies namely; Bajaj Hindustan Ltd, M R F Ltd, and Mahindra Life space Developers Ltd sorted on the basis of smallest cumulative return during the year. All the three companies show high fluctuation prior to the announcement date. The CAR of MRF limited posted a decline during the post- announcement period showing evidence of market perceiving the information negatively after the announcement.

Fig. 4.6: Dividend announcement effect of companies with highest CAR in 2007

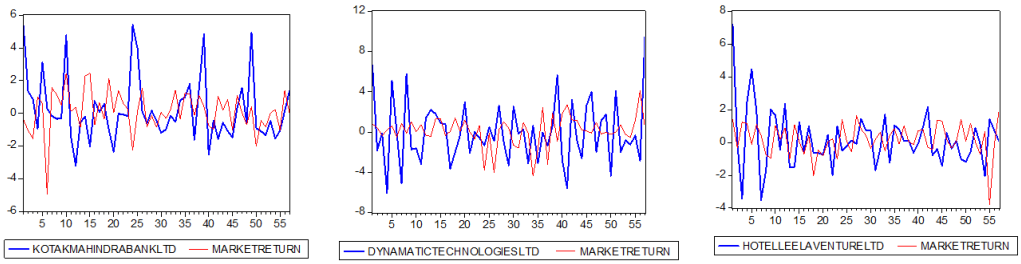


Figure 4.6 shows top three companies namely; Kotak Mahindra Bank Ltd, Dynamatic Technologies Ltd, Hotel Leela venture Ltd sorted on the basis of highest cumulative returns. The graph shows that in the case of Kotak Mahindra Bank Ltd, Dynamatic Technologies Ltd, and Hotel Leela venture Ltd companies have abnormal return during the announcement day. All the three companies have shown CAR prior to the announcement with evidence of market inefficiency and signaling effect. The CAR for the post announcement is less for Leela Venture in comparison to the other two companies. This shows that the information of dividend announcement of Leela Venture had a negative effect during the post- announcement drift. The reason for this may be due to the negative perception of the investors regarding the announcement.

Figure 4.7 shows that the top three companies namely; Kansai Nerolac Paints Ltd , Can Fin Homes Ltd and Mcleod Russel India Ltd sorted on the basis of smallest cumulative return. In the case of Kansai Nerolac Paints Ltd, the abnormal return is very less during the pre and post announcement period. However, the other two companies have shown a CAR before the announcement day and a sharp dip in the CAR during the announcement day.

Fig. 4.7: Dividend announcement effect of companies with smallest CAR in 2008

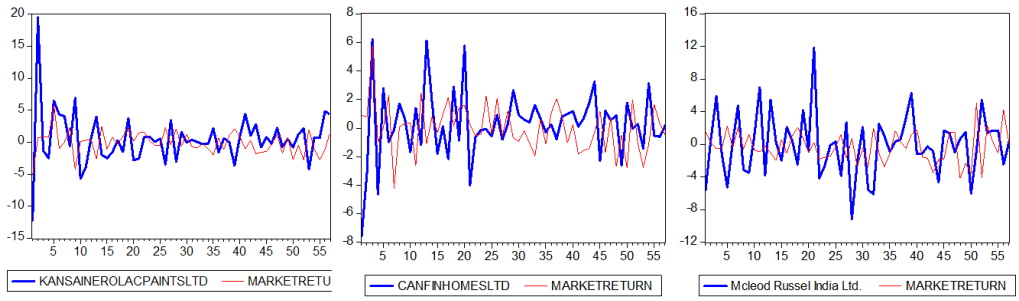


Fig. 4.8: Dividend announcement effect of companies with highest CAR in 2008

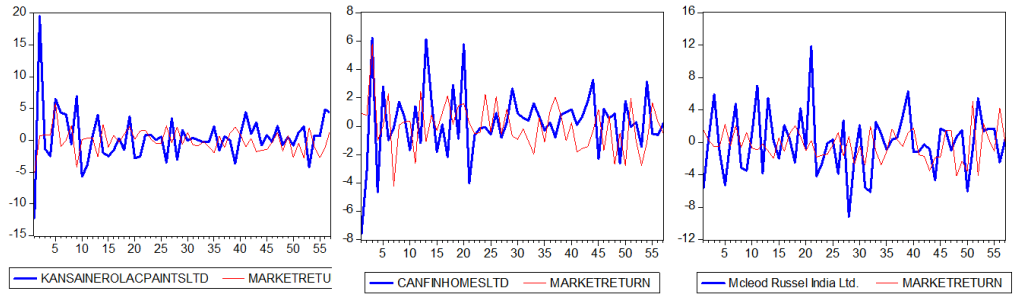


Figure 4.8 shows Amtek Auto Ltd, EID Parry India Ltd, and Indiabulls Financial Services Ltd sorted on the basis of highest CAR. Amtek showed a negative abnormal return prior to the announcement and a steep increase in CAR during the announcement and the post- announcement period. India bulls showed wide fluctuations prior to the announcement. This further substantiates our argument about the market inefficiency in its semi- strong form for its prevalence in the Indian stock market.

Figure 4.9 shows that the top three companies namely; HT Media Ltd, Gujarat Mineral Devp. Corpn Ltd. and NCC Ltd sorted on the basis of smallest cumulative return. In the case of HT Media Ltd, Gujarat Mineral Devp. Corp Ltd, and NCC Ltd. companies had a less abnormal return on the announcement day. Prior to the announcement day, information is leaked and shows sign of market inefficiency and signs of signaling effect.

Fig. 4.9: Dividend announcement effect of companies with smallest CAR in 2009

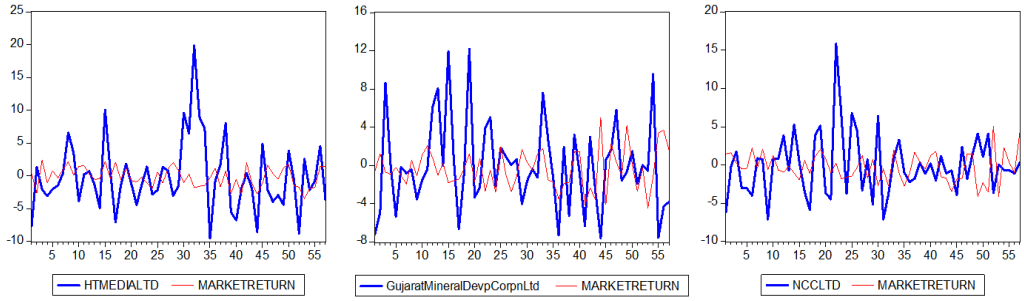


Fig. 4.10: Dividend announcement effect of companies with highest CAR in 2009

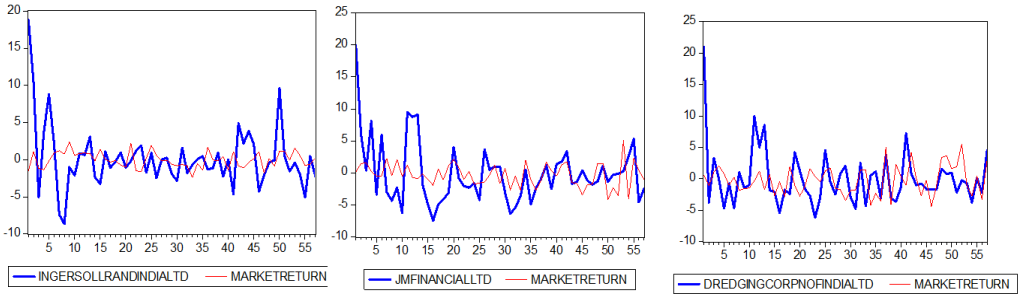


Figure 4.10 shows that Ingersoll Rand India Ltd, JM Financial Ltd and Dredging Corp Of India Ltd sorted on the basis of highest CAR. All the companies are showing abnormal return prior to the announcement day. This shows that market is not efficient in its semi- strong form. After the announcement day companies showing increasing trend on return indicate that these companies have a high signaling effect which is perceived positively by the investors.

Figure 4.11 shows Eicher Motors Ltd, Gateway Distriparks Ltd, and Astrazeneca Pharma India Ltd sorted on the basis of smallest cumulative return. Although the companies showed a less abnormal return on the announcement day, prior to the announcement day the information is leaking and the market shows efficiency in its semi- strong form.

Fig. 4.11: Dividend announcement effect of companies with smallest CAR in 2010

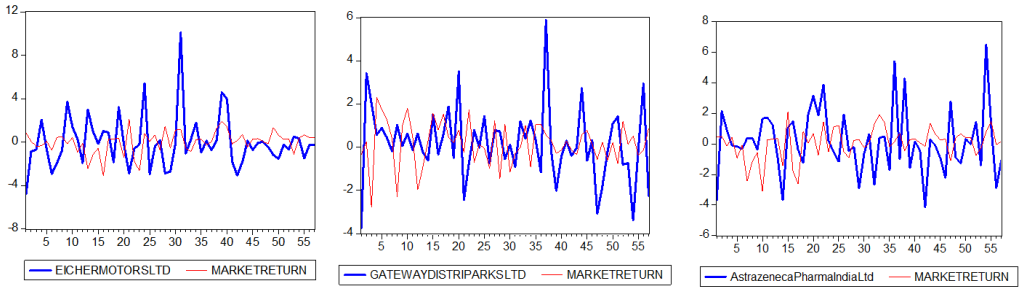


Fig. 4.12: Dividend announcement effect of companies with highest CAR in 2010

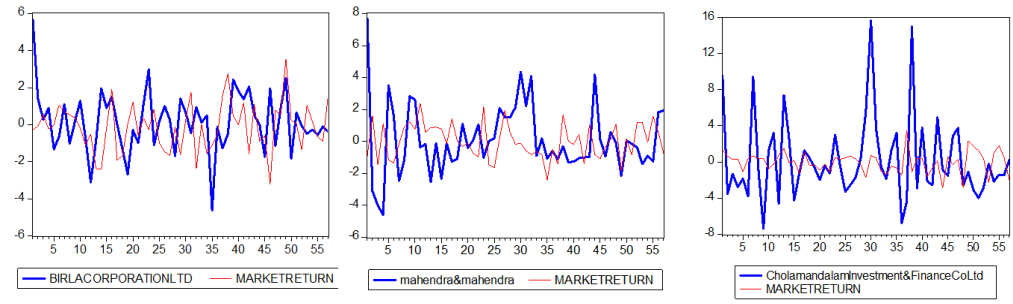


Figure 4.12 showed Birla Corporation Ltd, Mahindra & Mahindra Financial Services Ltd, and Cholamandalam Investment & Finance Co Ltd sorted on the basis of CAR. All the companies showed high abnormal return during the announcement period with Cholamandalam posting the highest CAR.

Fig: 4.13: Dividend announcement effect of companies with smallest CAR in 2011

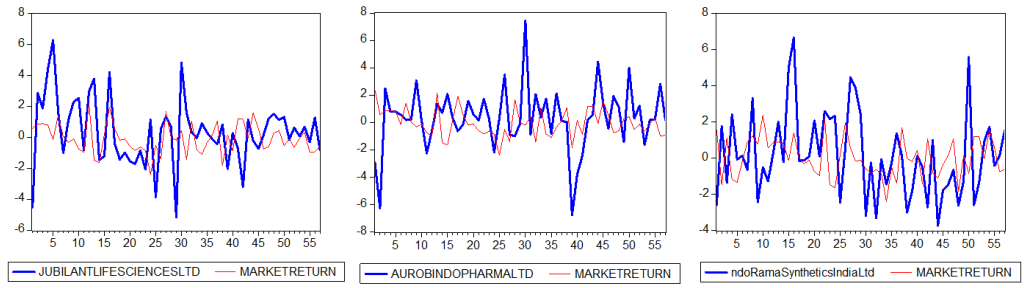


Figure 4.13 shows; Jubilant Life Sciences Ltd, Aurobindo Pharma Ltd, Indo Rama Synthetics India Ltd companies sorted on the basis of CAR. Jubilant Life Sciences Ltd, Aurobindo Pharma Ltd, Indo Rama Synthetics India Ltd were showing a less abnormal return on the announcement day before announcement day information is leaked to the market it shows that market is inefficient.

Fig: 4.14: Dividend announcement effect of companies with highest CAR in 2011

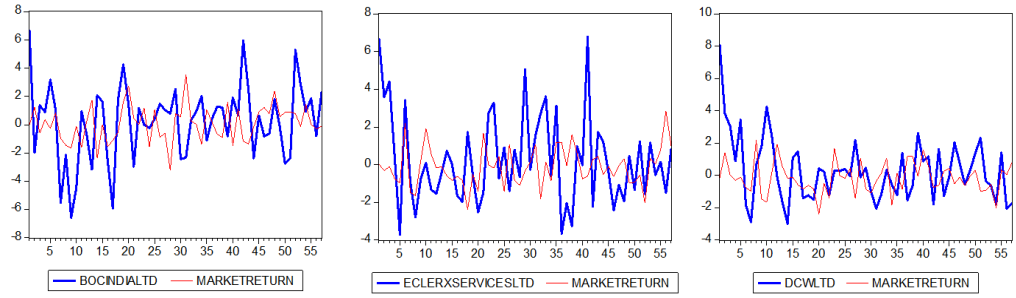


Figure 4.14 shows BOC India Ltd, Eclerx Services Ltd, and DCW Ltd, sorted on the basis of highest CAR. The graph indicates that these companies have a good signaling effect and the information is leaked to the market prior to the announcement.

The above analysis shows that the information is leaked to the market before the announcement day and shows wide fluctuations in the abnormal returns. Except for very few companies which show high abnormal return during the time of the announcement the remaining companies' news about the dividend, announcement reaches the market before it is announced. This shows that the dividend certainly has a signaling effect and Indian market is efficient in its semi -strong form. Another interesting observation is that in some cases the post- announcement drift shows a positive impact and in the other cases it shows a negative impact showing evidence for the cash flow hypothesis. When the investors have a feeling that the announcement of the dividend is a good sign of firm's financial soundness it creates a positive impact. On the other hand, many a times managers resort to dividend announcement to keep the tradition of the company or to create an

impression of financial soundness to the outside world. This sometimes creates a negative effect and results in the decrease of CAR during the post-announcement.

Market Efficiency at Aggregate Level

Fig. 4.15: Average Cumulative abnormal returns at aggregate level

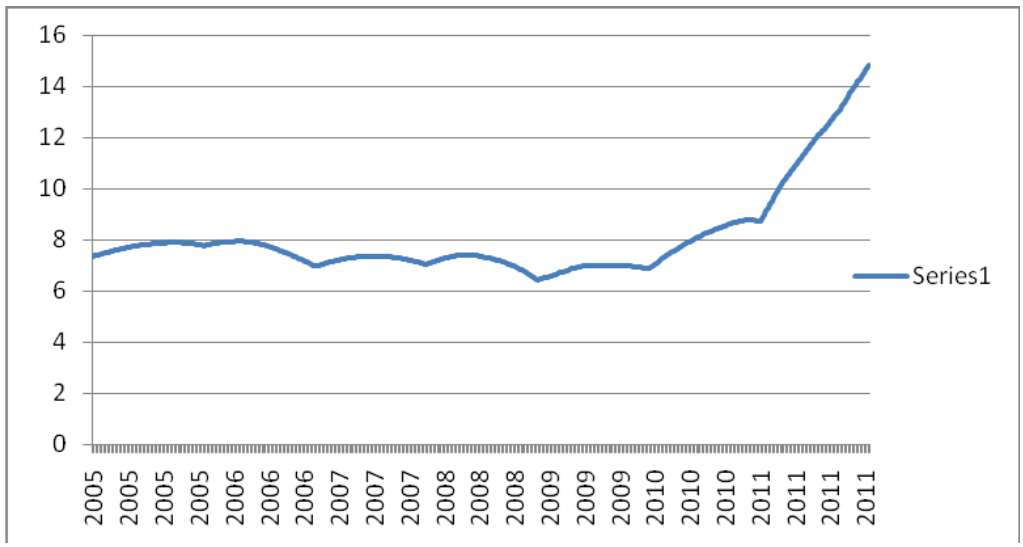


Figure 4.15 represents ACAR at an aggregate level over a period of seven years. Although individual firm analysis reveals the amount of inefficiency and the signaling effect in addition to the response of investors it does not give a complete picture. The bend in each year shows the CAR during the announcement period and the signs of the signaling effect due to the dividend announcement. However, some interesting inference can be made about this figure which shows ACAR the aggregate level. The year 2007-2009 is considered as a period of economic adversity globally.

However, this had some effect on the emerging market which is evident through this graph. The year 2005 -2006 shows that there is a slight decrease in the abnormal return and the crisis period 2007 -2009 shows less

cumulative abnormal return compared to pre-crisis period and post-crisis period. This graph also shows that there is a steep increase in abnormal return after the year 2010. The years 2007 to 2009 which were considered as the crisis period marks the lowest cumulative abnormal return in the graph. The crisis period also had an impact on the index due to the downturn of the economic condition. Post-crisis period shows that there is a positive trend in the cumulative abnormal return and the market may have slowly recovered which is in line with Sharma et.al (2014) study of the Indian market efficiency and also the analyses of dividend signaling effect. They found that there is no dividend signaling effect on dividend increase/decrease along with financial results disclosure on the share price of listed companies in India. In addition, the abnormal returns before the event and time lag in adjustment of prices post-event point out to the inefficiencies in Indian Stock market. Similarly Mehta et.al (2104) studied the market reaction to stock dividend. Study found that in pre-announcement window till the announcement day there is positive average abnormal return and in the case of post announcement window there is negative average abnormal return. This study showed that the shareholders of the companies which issued Stock dividends gained significant returns. Even more importantly the claims about economic adversity in the present study cannot be made from this graph but it definitely gives an indication to the signs of economic adversity which needs to be probed further.

5. Conclusion

This study tries to explain the signaling effects surrounding the dividend announcement by testing whether the information about the dividend announcement has any signaling effect. In addition, the study also tries to check the efficiency of the Indian market surrounding the dividend announcement. Using event study methodology, the study tests the dividend announcement effects at the firm level and aggregate level. The findings of the study show that Indian market is not efficient in semi-strong form and the information about the announcement of a dividend is leaked into the market prior to the announcement day. Further, the market perceives the announcement as good or bad depending on the firms which may result in positive or negative post- announcement drift. Therefore this shows that there is information asymmetry. In addition at an aggregate level, the study

found that the CAR surrounding the dividend announcement was very low during the period ranging from 2006-2007 which was considered as a period of global meltdown having some impact in the Indian market as well.

References

Bhattacharya, S. (1979). Imperfect information, dividend policy, and "the bird in the hand" fallacy. *Bell journal of economics*, *10*(1), 259-270.

Bozos, K., Nikolopoulos, K., & Ramgandhi, G. (2011). Dividend signaling under economic adversity: Evidence from the London Stock Exchange. *International Review of Financial Analysis*, *20*(5), 364-374.

Dasilas, A., & Leventis, S. (2011). Stock market reaction to dividend announcements: Evidence from the Greek stock market. *International Review of Economics & Finance*, *20*(2), 302-311.

Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The adjustment of stock prices to new information. *International economic review*, *10*(1), 1-21.

Gurgul, H., Mestel, R., & Schleicher, C. (2003). Stock market reactions to dividend announcements: Empirical evidence from the Austrian stock market. *Financial Markets and Portfolio Management*, *17*(3), 332-350.

Mandal, N., & Rao, N. K. (2010). Semi-Strong Form of Indian Stock Market Efficiency: An Empirical Study. *Vilakshan: The XIMB Journal of Management*, *7*(1).

Mehta Chhavi, P K Jain, and Surendra S Yadav (2014) Market Reaction to Stock Dividends: Evidence from India

Miller, M. H., & Rock, K. (1985). Dividend policy under asymmetric information. *The Journal of finance*, *40*(4), 1031-1051.

Pettit, R. R. (1972). Dividend announcements, security performance, and capital market efficiency. *Journal of Finance*, 993-1007.

Sharma Jitendra Kumar, Vijay Shankar Pandey (2014) Dividend Signalling and Market

Efficiency in Emerging Economy: A Study of Indian Stock Market. *International Journal of Finance & Accounting Studies*.

Zhian Chen, Donghui Lia, Zhengyuan Wang and Steven Wei (2012). Macro Information Environments and the Abnormal Returns to Rival Firms of Targets.