

SENSITIVITY OF STOCK RETURNS AND VOLATILITY TO DECLARATION OF DIVIDEND – THE INDIAN SCENARIO

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Abstract: This paper envisages to find out whether declaration of dividend does affect returns, volatility and systemic risk profile of stocks in India. The study envisages 32 companies listed with NSE across 16 sectors of the Indian Economy. Half of the companies are rich dividend payers and the other half are non-payers of dividend. The time period for the study has been chosen as the three consecutive years from 2012 to 2014. The findings of the study reveals that declaration of dividend has no effect on stock returns and volatility. Declaration of dividend is however found to have limited effect on Beta values of stocks.

Keywords: Dividend, Stock Return, Volatility, Beta.

Introduction: Dividend decision, the residual decision in financial management has been a widely debated topic with theories and empirical evidences proving seemingly opposite views. Dividend, being a form of return to investors, appears to be a determining factor for demand of stocks which in turn affect the price and ultimately the returns thereon. The expectation of dividends is expected to gain momentum from the declaration of the date of the Annual General Meeting. These expectations seem likely to affect the prices of stocks. Post the AGM date, the actual dividends declared, if any, either meets, or falls short of or exceeds the expectations which again is expected to affect the demand for stocks, stock prices & returns. This study is motivated by the urge to empirically examine whether returns on stock prices in India are actually affected by declaration of dividends. In essence, this paper attempts to check the validity of MM Dividend irrelevance hypotheses in Indian markets. Additionally, the study also envisages to examine whether the dividend irrelevance theory holds good for volatility and systemic risk of the stocks.

Literature survey: Abrahamsen and Balchen (2010) examined effects of changes in dividend policy on impending firm performance for non-listed small and medium sized Norwegian firms. Ainsworth and Nicholson (2015) found that dividend yields in USA could predict stock returns but failed to do so in about half 41 other countries. Allen and Bujang (2009) found empirical evidences of Dividend Yields and Dividend Ratios being robust predictors of annual stock returns and annual equity premiums in Malaysia. Ang and Liu (2006) characterized joint dynamics of dividends, expected returns, stochastic volatility and subsequent prices. Allen & Rachim (1996) could find no correlation between dividend yield and stock returns in Australian equity markets. Chaudhary et. al. (2016) investigated the indication effect of cash dividend announcements by employing the standard event methodology over the companies listed on Karachi Stock Exchange. The results of

study tend to support dividend indication hypothesis indicating the dividend announcement may be used as a tool to generate positive indications in and across the stock markets of the country. Boudoukh et al. (2007) investigated empirical implications of using various measures of payout yield rather than dividend yield for asset pricing models. They highlight statistically and economically significant predictability in the time series when payout (dividends plus repurchases) and net payout (dividends plus repurchases minus issuances) yields are used instead of the dividend yield. Similarly the fact stating that payout (net payout) yields contains information about the cross section of expected stock returns exceeding that of dividend yields, and that the high minus low payout yield portfolio is a priced factor is also one of the key findings of the study. Navid K. Choudhury (2003) used the dividend yield as a forecaster for stock market returns, examined by focusing on the United States along with 36 international markets. By performing time series and cross section analyses, the paper concluded that dividend yield predicts future rates of return. In a way it provides investors a simple and powerful tool to devise international investment strategies. Amarjit Gill et al (2010) sought to extend the findings by Amidu and Abor (2006) regarding the determinants of dividend payout ratios by examining for the American service and manufacturing firms. They concluded that as for the entire sample the dividend payout ratio is the function of profit margin, sales growth, debt-to-equity ratio, and tax. For firms in the Services industry the dividend payout ratio is the function of profit margin, sales growth, and debt-to-equity ratio. For manufacturing firms the finding is - dividend payout ratio is the function of profit margin, tax, and market-to-book ratio. Zhi Da et al. (2015) developed a proxy for growth based on sell-side analysts near-term earnings forecasts to construct stock yield. Sujata Kapoor (2006) specified by empirical testing of agency cost theory, Lintner model, dividend signaling and smoothing effects

using a framework of various econometric models. She found out that out of the chosen sectors Lintner model fits well in the FMCG sector signifying dividend signaling and smoothing effects are present in this sector. Thus these firms follow stable dividend payments year on year basis, even though earnings might change dramatically. The findings in the FMCG sector shows that that managers are very reluctant to cut dividends once they are initiated. This reluctance leads to dividends that are sticky, smoothed from year to year and tied to long run profitability of the firm. However IT sector and service sector demonstrate a pattern otherwise, which is seen in emerging economies in countries like Tunisia, Zimbabwe and Turkey. These sectors are as characterized by high target payouts coupled with high speed of adjustment coefficient. Lacerda and Santa-Clara (2010) emphasized on the fact that dividend-price ratio changes over time due to variation in expected returns and in forecasts of dividend growth. Dividend-price ratio, in order to isolate the fluctuations that are due to variation in expected returns from those that are due to changing forecasts of dividend growth, are adjusted accordingly. This adjusted dividend-price ratio is found to be statistically significant in predictive regressions and yields on an in-sample test as elaborated in the study. Maio and Santa-Clara (2012) generalized conviction that variation in dividend yields is exclusively related to expected returns and not to expected dividend growth. They show this pattern, although valid for the stock market as a whole, is not true for small and value stocks portfolios where dividend yields are related mainly to future dividend changes. Thus, the variance decomposition is associated with aggregate dividend yields, and has important heterogeneity in the cross-section of equities and return from it. Finally we conclude our review of past works on and over the study by Robertson and Wright (2006). They provided new evidence on the predictive power of dividend yields for U.S. aggregate and stock returns. Following Miller and Modigliani, they have constructed a measure of the dividend yield that includes all cash flows to shareholders. They have substantiated that this alternative cash-flow yield has strong and stable predictive power for stock returns. • The literature survey revealed that there is scope for a study on different sectors of Indian industry regarding changes, if any, on daily stock returns and volatility thereof for short periods on the expectations of dividend vis-à-vis on the declaration / non-declaration of dividend. The literature survey also identified a gap in the studies regarding changes in beta values of stocks over short periods induced by expectations of dividend and declaration / non-declaration of dividend.

Data & Methodology: Instead of the absolute dividend amounts, a relative measure of dividend yield has been considered in this study. To select the sample companies, the website <http://www.indiainfoline.com/> was visited on 03 March 2016 which contained a list of 573 companies listed with NSE across 16 Sectors along with their dividend yields as on 31 March 2015. The dividend yields were found to lie between the two extremities of 21.78% & zero. In order to spread the study over all the sectors and to have a comparative study, two companies from each sector was chosen, one with the highest Dividend Yield and the other with the least dividend yield. This resulted in a sample of 32 companies. As there were multiple companies with zero dividend yield, one among such companies in each sector was chosen by random sampling.

To balance the factors of recency and trend identification, the period of three years i.e. 2012, 2013 & 2014 was chosen.

The Dates of Annual General Meeting (AGM) for all the 32 selected companies for the said three years were collected from Capitaline Plus.

This paper envisaged that to capture the effects of dividend declaration, the event window should be short enough so as to weed out the simultaneous effect of other significant factors on stock returns. Yet the data points for each year should have been enough to carry out statistical hypotheses testing. Hence an event window of 14 days i.e. 7 days before and after the AGM has been considered.

Daily closing stock prices were collected for each of the 32 selected stocks from <https://www.nseindia.com> for such period of 14 days for each of the three years. Daily stock returns (as percentages) have been calculated as $R_t = (P_t - P_{t-1}) / P_{t-1} \times 100$.

To test whether the average daily return of the stocks differed significantly in the pre and post AGM periods, paired t test has been used. The pairing has been done to ensure that the two dates in a pair remain equidistant from the date of the AGM. The hypotheses framed for the purpose has been:

H_0 : There is no significant difference between the average daily returns of the pre and post AGM Periods;

H_1 : There is a significant difference between the average daily returns of the pre and post AGM Periods;

To test the volatility of the daily stock returns, which measures the total risk of a particular security, two approaches have been considered. Firstly, the amplitude of the deviations of the stock returns from the mean has been attempted to be captured by calculating the variances. The significance of the differences has been done by testing the following hypotheses using Levenes Test:

- H_0 : There is no significant difference between the variances of average daily returns of the pre and post AGM Periods;
- H_1 : There is a significant difference between the variances of average daily returns of the pre and post AGM Periods;

Secondly, the variances have been tested for their significance in an alternate way of considering the ratio of the variances of the pre and post AGM periods. If daily returns of the pre and post AGM dates be x & y , then the said ratio is $\sigma_x/\sigma_y = \xi$. Two new variables are considered as:

$$u = x + \xi y$$

$$v = x - \xi y$$

On the assumption that x & y are jointly normally distributed, u & v are also normally distributed and

$$\text{Cov}(u,v) = \sigma^2 x - \xi^2 \sigma^2 y = 0$$

If there is no difference between σ_x & σ_y , then $\xi = 1$.

Thus $u = x + y$ & $v = x - y$.

Now the correlation between u & v is tested with the following hypotheses:

- H_0 : There is no significant correlation between u & v ;
- H_1 : There is a significant correlation between u & v ;

Rejection of the Null leads to the conclusion that there is no difference between the variances of daily returns of the pre & post AGM periods.

The correlation between u & v has been calculated by two methods. Firstly Pearsonian Product Moment Correlation coefficients have been calculated. Secondly, on the assumption of non-normality, Kendall's Tau-b has also been used to calculate the correlation coefficients.

However, the variation in daily stock returns assumes greater importance when measured against the variation of daily returns on a broad based stock market index. This measure captures the stock-specific variations in daily returns and is an estimator of the systemic risk of a particular security. Thus the Beta have also been calculated for the pre and post AGM periods.

All the hypotheses have been tested at 5% Level of Significance.

Conclusion: The results of the comparative study of average daily returns on stock prices have revealed that returns are unaffected by the declaration / non-declaration of dividends. To have contrasting situations, companies with high and nil dividend yields were chosen across 16 sectors. The results reveal that out of the 96 hypotheses tested, the Null has been rejected in only three situations. This obviated that there were no significant changes in daily returns in any of the companies irrespective of sectors and irrespective of dividend declarations. Moreover, the directions of change in average daily returns on all the stock prices in the pre and post

AGM periods have also been found to contain no trend.

These findings corroborate the dividend irrelevancy of stock price movements.

The results of the comparative study of the variances of the daily returns on stock for the pre and post AGM periods, carried out using Levenes Test show that the directions of change in variances of average daily returns on all the stock prices in the pre and post AGM periods have also been found to contain no trend. The Null has been rejected in only 18 of the total 96 cases. This proves the overall irrelevance of dividend declaration on stock return variances as well. Out of the cases where the Null has been rejected, half are for increase in variance in the post AGM period and half for decrease.

The observations have been much the same when the significance of the changes in stock return variances were carried out using Pearsonian Correlation method. In only 18 out of total 96 cases, the Null have been rejected, proving the irrelevance of dividend declaration on stock return variances. However, out of 18 rejections of the Null, 12 rejections were for increase in variances in the post AGM period.

Using the Kendall's Tau-b method for testing the significance of changes in stock return variances, corroborated the above findings. Only 11 Null Hypotheses have been rejected out of a total of 96. Out of such 11 rejections of the Null, about half related to increase in stock return variances in the post AGM period.

The Beta values have been calculated for the stocks for three years pertaining to the pre and post AGM Periods. The CNX NIFTY have been used as the benchmark broad-based stock market index. The results show that out of total 96 cases, the Beta value has decreased in 54 cases and has increased in 41 cases. In Automobile sector, all the cases showed decrease in Beta Value in the post AGM period. Similar trend has been observed in the cases of Infrastructure Development and Pharmaceuticals Sector. However, in banking sector, the opposite trend has been noticed where the post AGM Beta values have increased.

Interestingly, in 20 situations positive beta values changed into negative in the post AGM period i.e. in the post AGM periods the stock return movement was against the market. In 17 cases, negative values changed into positive in the post AGM period indicating that the stock return movement which was opposite to the market in the pre AGM period became unidirectional with the market in the post AGM period.

The results have mixed implications to investors. Returns on stock and variances thereof are not affected by declaration of dividend. However,

systemic risk, represented by Beta value has been found to follow a trend in case of Automobile, Infrastructure Development, Pharmaceuticals & Banking Sectors. Moreover in case of Pharmaceuticals and Banking Sectors, Beta values have been found to change signs indicating reversal of direction of movement compared to the market movement.

Future scope of research: The present study has considered an event window of 7 days before and after the date of the AGM. The increasing dynamism and informational efficiency of present day stock

markets necessitates a similar study on shorter event windows.

Studies may also be undertaken with a larger sample size to verify the findings of the present study.

The Beta values for all the stocks have been calculated in this paper using the broad-based index stock market index of CNX NIFTY. Another approach may be taken by calculating Beta values of the selected stocks taking the respective sectoral stock market indices.

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