THE IMPACT OF DIVIDEND POLICY ON SHAREHOLDERS’ WEALTH BEFORE AND AFTER FINANCIAL MELT DOWN: EVIDENCE FROM FMCG SECTOR IN INDIA

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ABSTRACT

Dividend policy (DP) of corporate sector is widely researched topic in finance however; it remains a debatable issue to decide what factors determine the DP. The objective of this paper is to analyze the impact of dividend policy (DP) on shareholders’ wealth (SW) of Fast Moving Consumer Goods (FMCG) sector in India. Out of 16 firms listed on National Stock Exchange (NSE) 13 firms that have been paying dividend consecutively for the past ten years are considered for analysis. In the light of the prior literature, key predictor variables such as earnings per share (EPS), dividends per share (DPS), retained earnings per share (RPS), price earnings ratio (PER), lagged price earning (LAGPER), earnings (EAR), and lagged market value (LAGMPS) are considered for analyzing the impact of DP on SW. The descriptive statistics reveals that the data form in to normal. Whereas when the assumptions needed to be fulfilled for the Ordinary Least Square method (OLS), the data are found to be homoskedastic and are free of autocorrelation. Augmented Dickey Fuller Test (ADF), White-Heteroskedasticity Test, Auto Correlation, Breuch-Godfrey Serial correlation LM test, Durbin-Watson, Lagrange Multiplier (LM) for Autoregressive conditional heteroskedasticity (ARCH-LM), Correlation, Ordinary Least Square Regression and Chow test are applied using Eviews 7 Econometrics software package for analysis. Regression result proves that DPS (121.65) and RPS (9.68) have significant positive co-efficient on EPS(SW) of FMCG firms in India before global financial melt down, while DPS (76.74), LAGPER (1.52) and LAGMPS (0.27) have significant positive co-efficient (76.74) on EPS(SW) of FMCG firms in India after global financial melt down. The results of the Chow test proves that the FMCG firms have significant shift-in-structure (positive improvement) in respect of SW after global financial melt down.

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**Keywords:** Dividend per share (DPS), Dividend policy (DP), Market price per share (MPS), Price earnings ratio (PER), Earnings per share (EPS), Shareholders’ wealth (SW).

**JEL Classification:** G 35, L 25.

**Contribution/ Originality**

The study used new estimation methodology such as Augmented Dickey Fuller Test, White - Heteroskedasticity Test, Auto correlation, Breuch-Godfrey Serial correlation LM test, Durbin-Watson and ARCH-LM test and Chow test for analysis. Very few studies, which have investigated the impact of DP on SW before and after financial melt down studied the structural changes. However, the present study proved that the DP is significantly and positively related to retained earnings per share and earnings per share (SW). The result of the study is consistent with the findings of Gul et al. (2012), Salman (2013), Bawa and Kaur (2013), Azhagaiah and Sabaripriya (2008), etc.

1. **INTRODUCTION**

Dividend policy (DP) is one of the three major decisions of financial management. The decision of the firm regarding the extent of earnings that could be paid as dividend and the extent of that could be retained by the firm is the concern of DP. In other words, the DP determines what proportion of earnings is to be paid to shareholders by way of dividends and what proportion is ploughed back in the firm itself for its reinvestment purposes. The development of such a policy will be greatly influenced by investment opportunities available to the firm and the value of dividends as against capital gains to the shareholders. Each firm should develop such a DP, which divides the net earnings in to dividends and retained earnings in an optimum way to achieve the objective of maximizing the shareholders’ wealth (SW) as it is represented by market price (MP) of the firm’s common stock which, in turn, is the function of the firm’s investment, financing and dividend decision.

For studying the impact of DP on (SW), we have selected Fast Moving Consumer Goods (FMCG) sector, which is popularly known as consumer packaged goods sector. Items in this category include all consumables (other than groceries / pulses) that people buy at regular intervals. The most common products in the list are toilet soaps, detergents, shampoos, toothpaste, shaving products, shoe polish, packaged foodstuff, and household accessories and the list extends to certain electronic goods also.

1.1. **FMCG Sector in India**

The Indian FMCG sector is the fourth largest sector in the country with a total market size in excess of US$ 13.1 billion. It has a strong multinational companies (MNC) presence and is characterized by a well established distribution network, intense competition between the organized and unorganized segments and low operational cost. Availability of key raw materials, cheaper
labour costs and presence across the entire value chain gives India a competitive advantage. The FMCG sector is flooded by firms from India and abroad and in future, the level of competition would increase further. Moreover the GDP in Indian economy is increasing every year therefore per capita income increases and hence there is a scope for further development. At present large and small firms are operating in Indian FMCG sector. For the study purpose 13 firms are selected which, are listed on NSE. The FMCG market is set to treble from US$ 11.6 billion in 2003 to US$ 33.4 billion in 2015. (Source: Building business leadership / Confederation of Indian industry).

![India: Real gross domestic product (GDP) growth rate from 2004 to 2014 (compared to the previous year)](image)

**Figure - A.** India : Gross domestic product (GDP) growth rate from 2004 to 2014 ( in percentage)

Source: IMF Statista 2014

*Figure – A* depicts the real gross domestic product’s (GDP) growth rate from 2004 to 2014. The GDP rate has declined to 6.9% during the period of global financial melt down i.e. during 2008 - 09. So, the study attempts to find out the shift-in-structure in terms of DP on SW. For this purpose, the period of the study is divided into two sub-periods viz., before financial melt down i.e., from 2003 – 2007 and after global financial melt down i.e., from 2009 – 2013.

**1.2. Industry - Wise Impact**

*Figure – B* depicts the industry wise impact of global financial melt down. It is inferred that almost all key industries in India have been negatively impacted by global financial melt down and the FMCG sector is of no exception. In that, FMCG firms have registered an average growth score i.e. 21, which indicates moderate impact of global financial melt down.
Figure-B. Industry wise impact on global financial melt down chart during the year 2008 (रू. in crore)


An impact score of 0 – 15 indicates low impact
An impact score of 16 – 50 indicates moderate impact
An impact score of more than 50 indicates high impact

Hence, the present paper is to analyze the financial data of 13 FMCG firms for the financial data pertaining to the years ranging from 2003 - 2007 for before global financial melt down and from 2009 – 2013 for after global financial melt down, which are selected based on multi - stage non-random sampling technique, focusing on estimating the impact of financial variables viz., DPS, RPS, PER, LAGPER, EAR, LAGMPS on SW (EPS) of FMCG sector in India.

2. REVIEW OF LITERATURE

Several studies were made in relation to dividend policy (DP) and shareholders’ wealth (SW) in the developed as well as in the developing countries. Olandipupo and Okafor (2011), Devaki and Kamalaveni (2012), Gul et al. (2012), Onwumere et al. (2012), Salman (2013), Bawa and Kaur (2013), Azhagaiah and Sabaripriya (2008), Tahir and Raja (2014), Atiyet (2012), Chidinma et al. (2013), Kumaresan (2014), Uwuigbe et al. (2012) and Parua and Gupta (2009) investigated the impact of DP on SW applying OLS method of regression. Azhagaiah and Veeramuthu (2010) analysed the impact of firm size on dividend behavior with the help of Chow-test. Rafique (2012) examined the factors affecting DP using multiple regression and the study found that DP has significantly influenced SW.

Researchers have used regression, independent sample t-test, correlation, Granger Causality Test, ADF, and White - Heteroskedasticity Test to study the impact of the DP on SW.
Olandipupo and Okafor (2011), in their research work titled “Control of share wealth maximization in Nigeria” focused on parties controlling shareholders’ wealth maximization and the ways it affects the firm’s performance. The data used for the study were collected from the Nigerian stock exchange and the annual reports of six sample firms from food / tobacco and subsector for 20 years. The data collected were analyzed using ordinary least square (OLS) regression, autocorrelation and auto regression. The study showed that all the predictor variables provided good explanation. The firm size (FS) and retained earnings (RE) had positive relationship and their impact was proved statistically significant on the shareholders’ fund, while dividend payment had negative relationship with the SW. However, turnover and retained earnings were of more significance in controlling the shareholders’ wealth than the dividend payout.

Devaki and Kamalaveni (2012), in their paper titled “Shareholding patterns and dividend payout: An empirical analysis in Indian corporate hotels” examined the influence of shareholding pattern of the Indian corporate hotels. Data were collected from 152 Indian firms (both listed and unlisted) in hotel industry from the electronic corporate database called CMIE and CAPTALINE database. Fixed effect firm model estimation revealed that there was a positive association between lagged dividend, earnings, debt-equity ratio, sales size, age of the firm and institutional shareholding.

Gul et al. (2012),in their study titled “The relationship between dividend policy and shareholders’ wealth” examined the influence of DP on SW of 75 listed firms in Karachi stock exchange. Data were collected from annual reports of the firms, Karachi stock market and State Bank of Pakistan. Descriptive statistics, multiple regression and stepwise regression methods were used to study the impact of DP on SW. The study found that the difference in average market value relative to book value of equity was highly significant for dividend paying firms and dividend non-paying firms. Lagged market value of equity had a significant impact on the market price per share; however, retained earnings had insignificant influence on the market price of equity as far as the dividend paying firms are concerned and there was a significant influence of DP on SW.

Onwumere et al. (2012), in a research paper titled “Does the use of outsiders fund enhance shareholders’ wealth: Evidence from Nigeria” attempted to study the links between the firms’ financial structure and the objective of the firms in maximizing shareholders’ wealth. The study relied on historic accounting data obtained from the financial statements and accounts of 28 firms in the Nigerian stock exchange. The study examined the impact of outsiders’ fund on the firms’ SW maximization using three value maximization indicators viz., net profit margin, dividend per share and current ratio. The study revealed that outsiders’ fund was positive and did not have significant impact on the dividend per share and current ratio; outsiders’ fundhadnegative and significant impact on the net profit margin.

Salman (2013) examined the “Effect of DP on SW of sugar industry in Pakistan” considering a sample of 33 listed firms of sugar industry listed on Karachi Stock Exchange. The data were collected for a period of six years ranging from 2006 to 2011. Descriptive statistics and regression
analysis were applied for analysis considering dividend per share (DPS), earnings per share (EPS), lagged market price per share (MPS), price earnings ratio (PER), and retained earnings (RE) as predictor variables and market price per share (MPS) as response variable. The study showed that DPS, EPS, Lagged MPS, and Lagged PER had significant positive relationship with SW.

Bawa and Kaur (2013), in a research work titled “Impact of dividend policy on shareholders’ wealth: An empirical analysis of Indian information technology sector” selected 308 firms, which have listing flag in National stock exchange and Bombay stock exchange with the objective to study the impact of DP on SW. Variables, viz., dividend per share (DPS), retained earnings per share (REPS), lagged price earnings ratio (LAGPER) and lagged market price per share (LAGMPS) were considered as predictor variables and market price per share (MPS) was considered as response variable. Panel data methodology was applied to study the impact of DP on market value of equity. The results showed that in the long run, shareholders’ wealth of dividend paying IT firms had increased significantly when compared to the non-dividend paying IT firms.

Azhagaiah and Sabaripriya (2008), in their study titled “The impact of dividend policy on shareholders’ wealth” analyzed the impact of DP on shareholders’ wealth in organic and in-organic chemical firms in India with a sample of 28 firms selected from 114 listed firms on BSE using multi stage non-random sampling technique. They used mean, standard deviation multiple regression and stepwise regression techniques to ascertain the best fitted model for predicting the DP and studying its impact on SW. The study proved that the wealth of the shareholders’ was greatly influenced mainly by five variables viz., growth in sales, improvement of profit margin, capital investment decision, capital structure decision and cost of capital. There was a significant impact of DP on SW in organic chemical firms, while the SW was not influenced by dividend payout as far as the organic chemical firms are concerned.

Tahir and Raja (2014), in their study titled “Impact of dividend policy on shareholders’ wealth” of oil and gas exploration firms of Pakistan during the years from 1999 to 2006 used regression and correlation to ascertain the best fitted model for the DP and to study its impact on SW. The variables viz., dividend payout ratio (DPR), price earnings ratio (PER) and book value to market value of equity (BV/MV) ratio were considered as predictor variables and holding period yield as response variable. The result showed a correlation between predictor variables and response variable for all the firms. Oil and gas industry of Pakistan paid dividend on regular basis but there was uncertainty in stock market due to which holding period returns were not efficient because share price of firms were not stable and fluctuation took place in firms and the study proved that dividend payout ratio had insignificant relationship with holding period yield.

Atiyet (2012), in a study titled “The impact of financing decision on the shareholder value creation” covered 88 firms listed on French stock exchange. Shareholders’ wealth creation was a response variable while equity issue, debt, growth rate, profitability, investment opportunities, and size were considered as predictor variables. Statistical tools like regression and correlation were used to ascertain the best fitted model for the impact of financing decision on shareholders’ value.
creation. The result showed that growth, profitability, financial debt and size of the firm had significant impact on shareholders’ wealth.

Chidinma et al. (2013), in their study titled “Shareholders’ value and firms’ dividend policy: Evidence from public firms on Nigeria stock exchange” used secondary data of 216 public limited firms listed on Nigerian stock exchange for the period of 2000-2011. Dividend per share (DPS) was considered as response variable, while earnings per share (EPS) and market price per share (MPS) were considered as predictor variables. The study found that earnings per share and market price per share had significant impact on SW; a high dividend payout increases the market value of shares and thus, the shareholders’ value.

Kumaresan (2014), in a study titled “Impact of dividend policy on shareholders’ wealth: A study of listed firms in hotels and travels sector of Sri Lanka” focused on top ten firms under hotel and travel sectors in Sri Lanka during the period from 2008 to 2012. Shareholders’ wealth (EPS) was considered as response variable while predictor variables were: return on equity (ROE), dividend payout ratio (DPR), dividend per share (DPS) and retention ratio (RR). The study used correlation and regression to analyse the data collected from top ten listed firms under hotel and travel sectors. The study found that there was a positive relationship between return on equity (ROE), dividend per share (DPS) and dividend payout ratio (DPO) and shareholders’ wealth (SW) of the selected firms under hotel and travel sectors in Sri Lanka and the study also proved that there was a negative relationship between retention ratio and shareholders’ wealth.

Uwuigbe et al. (2012) studied the relationship between financial performance and dividend payout among the listed firms in Nigeria for a period of five years i.e. 2005-2010 and found that there was a significant positive association between the performance of firms and the dividend payout; ownership structure and firm’s size on dividend payout of the firms.

Rafique (2012) examined the “Factors affecting the dividend payout of listed non-financial firms of Karachi Stock Exchange” with a sample of 53 firms listed as non–financial firms on the Karachi stock exchange for the period 2005-2010. The data were found to be Homoskedastic and free of auto correlation and the regression results revealed that corporate tax (CT) and firms’ size (FS) had significant relationship with DP of firms.

Azhagaiah and Veeramuthu (2010) examined the association between corporate leverage and DP of the firms across sectors in India on panel data of 73 firms for a period 1996-2007. The study proved that there was a significant impact of selected predictor variables on dividend behavior; the DP of small size, medium size and large size firms and overall corporate firms across sectors in India was dependent on the debt – equity ratio.

2.1. Objectives and Hypotheses Development for the Study

The main objective of the study is to empirically analyze the impact of dividend policy on shareholders’ wealth. The following are the specific objectives of the study:
➢ To study the relationship between dividend policy and shareholders’ wealth of FMCG sector in India before financial melt down and after financial melt down.
➢ To analyze the variation in studying the impact of selected variables (DPS, RPS, EAR, PER, LAGPER, LAGMPS) on the SW (EPS) of FMCG sector in India.

2.2. The Following are the Hypotheses Developed for the Study

\( H_0^1 \): “There is no significant impact of dividend per share (DPS) on earnings per share (EPS) (SW) before global financial melt down”.

\( H_0^2 \): “There is no significant impact of retained earnings per share (RPS) on earnings per share (EPS) (SW) before global financial melt down”.

\( H_0^3 \): “There is no significant impact of dividend per share (DPS) on earnings per share (EPS) (SW) after global financial melt down”.

\( H_0^4 \): “There is no significant impact of lagged price earning ratio (LAGPER) on earnings per share (EPS) (SW) after global financial melt down”.

\( H_0^5 \): “There is no significant impact of lagged market price per share (LAGMPS) on earnings per share (EPS) (SW) after global financial melt down”.

\( H_0^6 \): “There is no significant shift in structure in the shareholders’ wealth (SW) of FMCG sector in India after global financial melt down”.

3. RESEARCH METHODOLOGY

3.1. Data Source

The study is analytical and empirical in nature and is based on secondary data. For the study, a sample of 13 FMCG firms listed on NSE has been selected using multi stage non-random sampling technique. The period of the study has been divided into two sub-periods viz., before global financial melt down i.e., from 2003-2007 and after global financial melt down i.e., from 2009-2013. The global financial melt down occurred during the year 2008 is considered as the base for the study to analyze the impact of DP on SW. The required data were collected from the website called moneycontrol.com and the annual reports of the FMCG firms concerned too. The annual data for the selected FMCG firms are used for calculating key financial ratios (measures) to analyze the impact of DP on SW.

3.2. Research Methods

Various statistical methods like Augmented Dickey Fuller Test, White - Heteroskedasticity Test, Auto Correlation, Breuch-Godfrey Serial correlation LM test, Lagrange Multiplier (LM) for Autoregressive conditional heteroskedasticity, Correlation, Ordinary Least Square method of regression and Chow test are applied for analysis of data using Eviews 7 Econometrics software package.

For the analysis of pooled data for ten years i.e. from 2003 – 2007 and 2009-2013, the following research methods are used.
Descriptive Statistics (Jarque-Bera test)

Ordinary Least Square regression method

Augmented Dickey Fuller Test, White - Heteroskedasticity Test, Auto correlation, Breuch-Godfrey Serial correlation LM test, Durbin-Watson and ARCH-LM test and Chow test

General form of the Regression Model

$$EPS = \beta_1 (DPS) + \beta_2 (RPS) + \beta_3 (PER) + \beta_4 (LAGPER) + \beta_5 (EAR) + \beta_6 (LAGMPS) + e$$

Earnings per share (EPS), Dividend per share (DPS), Retained earnings per share (RPS), Price earnings ratio (PER), Lagged price earnings ratio (LAGPER), Earnings (EAR), Lagged market price per share (LAGMPS).

3.3. Chow Test

The shift-in structure in terms of DP on SW is studied with the help of chow test, which (Chow, 1960) was originally designed to analyse the same variables obtained in two different data sets to determine if they were similar enough to be pooled together. The method, however, could be used to determine if two regression lines are different from one another (Lee, 2008). The chow test for parameter stability confirms that there was a structural change in the equation. The chow test models indicate that for all the series under examination, the null hypothesis of more than one structural break time can be rejected (Allaro et al., 2011).

The impact of DP on SW is studied through its structural changes. For this purpose, the period of study has been divided in to two sub-periods viz., before global financial melt down i.e., from 2003 – 2007 and after global financial melt down i.e., from 2009 – 2013.

The test statistic is as follows:

$$F = \frac{(RSS_p - (RSS_1 + RSS_2))/k}{(RSS_1 + RSS_2)/ (N_1 + N_2 - 2k)}.$$

This is distributed as F with k and $n_1 + n_2 - 2k$ degrees of freedom

Where, F is the test statistic

- RSS_p = residual sum of squares for the whole sample
- RSS_1 = residual sum of squares for the first group (before dividend announcement)
- RSS_2 = residual sum of squares for the second group (after dividend announcement)
- N = number of observations
- K = number of regressors (including the intercept term) in each unrestricted sub-sample
- 2K = number of regressors in both unrestricted sub-sample regressions (whole sample)
3.4. Sampling Technique

The study used *multistage non-random sampling technique* to select the ultimate sample units. Out of 16 firms having listing flag on NSE, 13 firms are selected based on adequate availability of data for the study period.

### Table 1. List of Measures (ratios) Used in the Study for Analysis

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Variable / Measure</th>
<th>Formula</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earnings per share (EPS)</td>
<td>Net income / Number of equity shares</td>
<td>It represents the capacity of firm to pay dividends. Firm is willing to pay high dividend if it increases profitability.</td>
</tr>
<tr>
<td>2</td>
<td>Dividend per share (DPS)</td>
<td>Total dividend / No. of equity shares outstanding</td>
<td>The dividend per share reveals how well earnings support the dividend payout.</td>
</tr>
<tr>
<td>3</td>
<td>Retained earnings per share (REPS)</td>
<td>Retained earnings / No. of equity shares outstanding</td>
<td>A firm with growth in its retained earnings can use the additional earnings to expand its business, which can potentially lead to high profits and increase the firm’s value.</td>
</tr>
<tr>
<td>4</td>
<td>Price earnings ratio (PER)</td>
<td>Market value per share / Earnings per share</td>
<td>High price earnings ratio indicates that investors anticipate high growth in future.</td>
</tr>
<tr>
<td>5</td>
<td>Earnings (EAR)</td>
<td>Total revenue – Total expenses</td>
<td>Higher the earnings, larger the cash flow and therefore, firms will pay high dividend.</td>
</tr>
<tr>
<td>6</td>
<td>Market price per share (MPS)</td>
<td>Market capitalization / No. of equity shares outstanding</td>
<td>High market value reflects that the firms are in very good position and lower value reflects otherwise.</td>
</tr>
</tbody>
</table>

Source: www.scibd.com/essays/finance.php  
Source: www.ukessays.com/essays/finance/current-assets-current-liability.php

*Table 1* depicts the variables which were used to study the impact of dividend policy on shareholders’ wealth before and after financial melt down of the FMCG firms listed on BSE. *Earnings per share (EPS)* was considered as response variable, while *dividend per share (DPS)*, *retained earnings per share (REPS)*, *price earnings ratio (PER)*, *earnings (EAR)* and lagged market price per share (*LAGMPS*) were considered as predictor variables.

### 4. DESCRIPTIVE STATISTICS

*Table 2* shows the descriptive statistics of seven selected financial variables on dividend policy, which reveals that the data are normally distributed. The data set contained a total of 130 observations of 13 firms over a period of ten years. The mean of all the selected seven variables is very much close to the median, implying normality. The average *DPS* is 0.09 i.e., 9% which means, on an average, the firms pay about 9% of their profit as dividend. *RPS* shows an average of 2.02, which reflects a firm with growth in its *RPS*, which can lead to high profits and increase the shareholders’ wealth. *EAR* shows an average of 606.66. Higher earnings reflect that the firms have
capacity to pay dividend. The average of PER and LAGPER is 21.61 and 20.14 respectively, which means that the investors anticipate high growth in future. The average of EPS is 22.35, which reflects that the firms of FMCG sector have good earnings and capacity to pay dividend if it increases profitability. The average of LAGMV (388.50) reflects that the firms of FMCG sector are in very good position during the study period, which infers that the firms are potential and successful in DP in the long-run.

The maximum and minimum values of the selected variables have more volatility for all except for EAR. The standard deviation of EAR is the highest (1051.61), whereas the lowest that of DPS is 0.08. All the selected variables are positively skewed except for PER. Probability of EAR is less than 1% level, implying that the selected variables are significant at 99% confidence interval. DPS and RPS is less than 5% level, implying that the selected variables are significant at 95% confidence interval.

<table>
<thead>
<tr>
<th>Variables</th>
<th>DPS</th>
<th>RPS</th>
<th>PER</th>
<th>LAGPER</th>
<th>EAR</th>
<th>LAGMV</th>
<th>EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.09</td>
<td>2.02</td>
<td>21.61</td>
<td>21.60</td>
<td>606.66</td>
<td>388.50</td>
<td>22.35</td>
</tr>
<tr>
<td>Median</td>
<td>0.08</td>
<td>1.47</td>
<td>21.41</td>
<td>20.14</td>
<td>230.76</td>
<td>223.09</td>
<td>21.06</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.24</td>
<td>7.32</td>
<td>35.14</td>
<td>46.53</td>
<td>3598.38</td>
<td>898.79</td>
<td>54.61</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.01</td>
<td>0.28</td>
<td>3.12</td>
<td>5.86</td>
<td>21.05</td>
<td>3.60</td>
<td>3.5</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.08</td>
<td>1.98</td>
<td>9.95</td>
<td>10.71</td>
<td>1051.61</td>
<td>342.60</td>
<td>16.14</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.66</td>
<td>1.58</td>
<td>-0.31</td>
<td>0.73</td>
<td>2.207</td>
<td>0.30</td>
<td>0.70</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.19</td>
<td>4.63</td>
<td>2.07</td>
<td>3.35</td>
<td>1.36</td>
<td>2.37</td>
<td>2.5</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>1.36**</td>
<td>6.91**</td>
<td>0.68</td>
<td>1.23</td>
<td>16.67***</td>
<td>1.65</td>
<td>1.28</td>
</tr>
<tr>
<td>Probability</td>
<td>0.04</td>
<td>0.03</td>
<td>0.70</td>
<td>0.53</td>
<td>0.00</td>
<td>0.43</td>
<td>0.52</td>
</tr>
<tr>
<td>N</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

Dividend per share (DPS), Retained earnings per share (RPS), Price earnings ratio (PER), Lagged price earning ratio (LAGPER), Earnings (EAR), Lagged market value (LAGMV), Earnings per share (EPS).

Source: Computed results based on compiled data from the Annual Financial Reports of selected corporate firms from moneycontrol.com

*** Significant at 1% level; ** Significant at 5% level

Figure-C: Jarque-Bera Test of Selected Variables of FMCG firms in India from 2008 to 2012 (in crore) Normality Test

Source: Computed results based on compiled data from the Annual Financial Reports of the selected corporate firms moneycontrol.com
Figure – C depicts normality test, which reveals that the data form normal distribution. Jarque-Bera test (0.56) is a goodness of fit, which is a measure of departure from normality, based on the sample of kurtosis and skewness. So, the samples from a normal distribution have an expected skewness of -0.29 and an expected kurtosis of 2.17.

\[ JB = \frac{n-k}{6} \left( s^2 + \frac{1}{4}(K-3)^2 \right) \]

Table 3 shows the presence of unit root in the series using Augmented Dickey-Fuller Test (ADF). The results show that there is a need for verifying whether the data are stationary by unit root test, hence it is conducted by Augmented Dickey-Fuller (ADF).

\[ \Delta Y_t = \alpha + \beta T + \delta Y_{t-1} + u_t \]

\( H_0: \delta = 0 \) (Unit Root)
\( H_1: \delta \neq 0 \)

The p values of ADF are less than 0.05, which infer that the data of the time series for the whole study period are stationary. The ADF test statistics report that hypothesis of a unit root in the series is rejected at 1% level for EPS, DPS, PER, LAGPER, EAR and LAGMV (critical values - 4.86, -4.48, -10.31, -6.48, -4.70 respectively) and at 5% for RPS (critical value of -4.19) for the ADF test. Therefore, the result of the test confirms that the data of the series are stationary.

Table 4 shows the presence of homoskedasticity between variables, which means that the spread should be constant and same.
Variance of residuals should be constant otherwise, the condition for existence of regression, homoskedasticity would be violated and the data would be heteroskedastic. To check, white heteroskedasticity test is applied for the residuals, which reveals that the probability is more than 5%. Hence, it proves that there is absence of heteroskedasticity and the data have uniform spread.

Table 5. Results of Breuch-Godfrey Serial correlation LM test

<table>
<thead>
<tr>
<th></th>
<th>F-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.779</td>
<td>0.614</td>
</tr>
<tr>
<td>Obs* R-Squared</td>
<td>5.696</td>
<td>0.458</td>
</tr>
</tbody>
</table>

Source: Computed results based on compiled data from the Annual Financial Reports from moneycontrol.com

It is evident that there is no serial correlation (vide table 5). Hence, the null hypothesis is accepted, which infers that if an estimated regression line fulfills all the requirements of a good regression model it invites to move for further hypothesis testing or forecasting. The estimated regression has either no heteroskedascity or no serial correlation hence it leads to go for testing hypothesis by use of ARCH-LM model.

Table 6. Results of ARCH-LM test

<table>
<thead>
<tr>
<th></th>
<th>F-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.537</td>
<td>0.059</td>
</tr>
<tr>
<td>Obs* R-Squared</td>
<td>3.135</td>
<td>0.056</td>
</tr>
</tbody>
</table>

Source: Computed results based on compiled data from the Annual Financial Reports from moneycontrol.com

6 shows the ARCH-LM test, ($p < 0.05$) and the null hypothesis is rejected at 5% level, which reveals that there is presence of ARCH effect in the residuals of simple time series models.

5. CORRELATION ANALYSIS

Table 7(a) shows the correlation matrix of selected variables; the relationship between EPS and RPS (0.837); that of between LAG MPS and EPS (0.751), which are highly significant positively at 1% level; whereas the relationship between EPS and DPS (0.617); and that of between EAR and PER (0.659); and that of between LAGMPS and LAGPER (0.585) are significant positively at 5% level.

Table 7(b) shows the correlation matrix of selected variables, the relationship between EPS and DPS (0.924); that of between EPS and RPS (0.720); that of between LAGPER and PER (0.946); that of between LAGMPS and DPS (0.706); that of between LAGMPS and RPS (0.876); and that of between LAGMPS and EPS (0.827) are highly significant positively at 1% level; whereas the relationship between DPS and RPS (0.594) is significant positively at 5% level.
**Table-7(a).** Results of Correlation Analysis among the Predictor Variables of FMCG Firms in India from 2003 to 2007 (₹ in crore)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pearson Correlation</th>
<th>DPS</th>
<th>RPS</th>
<th>PER</th>
<th>EPS</th>
<th>LAGPER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPS</strong></td>
<td></td>
<td>0.617**</td>
<td>0.837 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.02</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EAR</strong></td>
<td></td>
<td></td>
<td>0.659**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.014</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LAGMPS</strong></td>
<td></td>
<td>0.751***</td>
<td>0.585**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.003</td>
<td>0.036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Earnings per share (EPS), Earnings (EAR), Lagged market price per share (LAGMPS), Dividend per share (DPS), Retained earnings per share (RPS), Price earning ratio (PER), Lagged price earning ratio (LAGPER).

**Source:** Computed results based on compiled data from the Annual Financial Reports from moneycontrol.com

*** Significant at 1% level; ** Significant at 5% level.

---

**Table-7(b).** Results of Correlation Analysis among the Predictor Variables of FMCG Firms in India from 2009 to 2013 (₹ in crore)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pearson Correlation</th>
<th>DPS</th>
<th>RPS</th>
<th>PER</th>
<th>EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPS</strong></td>
<td></td>
<td>0.924***</td>
<td>0.720 ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DPS</strong></td>
<td></td>
<td></td>
<td>0.594**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.032</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LAGPER</strong></td>
<td></td>
<td></td>
<td>0.946***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LAGMPS</strong></td>
<td></td>
<td>0.706***</td>
<td>0.876***</td>
<td>0.827***</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.007</td>
<td>0.000</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>13</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

Earnings per share (EPS), Dividend per share (DPS), Lagged price earnings ratio (LAGPER), Lagged market price per share (LAGMPS), Retained earnings per share (RPS), Price earnings ratio (PER).

**Source:** Computed results based on compiled data from the Annual Financial Reports from moneycontrol.com

*** Significant at 1% level; ** Significant at 5% level.
5.1. Impact of Dividend Policy on Shareholders’ Wealth - Regression Analysis

Table 8. Results of Multiple Regression of Selected Variables of Dividend Policy on Shareholders’ Wealth of FMCG firms in India for the period Before Global Financial Melt down (2003 -2007) and After Global Financial Melt down (2009 – 2013) periods

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized coefficients beta value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before Global financial melt down</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Constant ( EPS)</td>
<td>-10.91</td>
</tr>
<tr>
<td>DPS</td>
<td>121.65</td>
</tr>
<tr>
<td>RPS</td>
<td>9.68</td>
</tr>
<tr>
<td>PER</td>
<td>0.024</td>
</tr>
<tr>
<td>LAGPER</td>
<td>0.16</td>
</tr>
<tr>
<td>EAR</td>
<td>0.005</td>
</tr>
<tr>
<td>LAGMPS</td>
<td>0.006</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.889</td>
</tr>
<tr>
<td>R²</td>
<td>0.94</td>
</tr>
<tr>
<td>F Statistics</td>
<td>16.680*** (0.002)</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>65</td>
</tr>
<tr>
<td>Number of observations</td>
<td>65</td>
</tr>
</tbody>
</table>

Earnings per share (EPS), Dividend per share (DPS), Retained earnings per share (RPS), Price earning ratio (PER), Lagged price earning ratio (LAGPER), Earnings (EAR), Lagged market price per share (LAGMPS).

Source: Computed results based on compiled data from the Annual Financial Reports from moneycontrol.com

*** Significant at 1% level; ** Significant at 5% level.

The impact of DP on SW of IT sector has been analyzed using multiple regression analysis. The dividend per share (DPS) has been used as proxy for measuring the DP of the firms and earnings per share (EPS) of the firms is considered as proxy for measuring the SW and is used as response variable. Apart from DPS, retained earnings per share (RPS), earnings (EAR), price earnings ratio (PER), lagged price-earnings ratio (LAGPER) and lagged market price per share (LAGMPS) are also used as predictor variables to study whether DP of FMCG firms has impacted the SW. The results of the regression analysis are presented in table 8.

The DPS has significant positive co-efficient (121.65) on EPS (SW) for the period before global financial melt down in India. Hence, H₀¹: “there is no significant impact of DPS on EPS (SW) before global financial melt down” is rejected at 5% level. RPS has significant positive co-efficient (9.68) on EPS (SW) before global financial melt down in India. Hence, H₀²: “there is no significant impact of RPS on EPS (SW) before financial melt down” is rejected at 5% level. [The F- statistics (16.680) is significant at 1% level with R² (0.94); Adj R² (0.88)].

The Regression Results are as Follows (Before Global Financial Melt Down)

\[
EPS = \beta_1 (DPS) + \beta_2 (RPS) + \beta_3 (PER) + \beta_4 (LAGPER) + \beta_5 (EAR) + \beta_6 (LAGMPS) + e
\]

(1.39)(2.55) **(4.13) *** (0.098) (0.447) (0.955) (0.208)
The regression equation infers that there is a significant positive impact of \( \text{DPS} \) and \( \text{RPS} \) on \( \text{EPS} \) (SW) before financial melt down.

The \( \text{DPS} \) has significant positive co-efficient (76.74) on \( \text{EPS} \) (SW) of FMCG firms after global financial melt down in India (vide table 8). Hence, \( H_0^3: \) “there is no significant impact of \( \text{DPS} \) on \( \text{EPS} \) (SW) of FMCG firms after financial melt down” is rejected at 5% level. \( \text{LAGPER} \) has significant positive co-efficient (1.52) on \( \text{EPS} \) (SW) of FMCG firms after global financial melt down in India. Hence, \( H_0^4: \) “there is no significant impact of \( \text{LAGPER} \) on \( \text{EPS} \) (SW) of FMCG firms after global financial melt down” is rejected at 5% level. \( \text{LAGMPS} \) has significant positive co-efficient (0.27) on \( \text{EPS} \) (SW) of FMCG firms after global financial melt down in India. Hence, \( H_0^5: \) “there is no significant impact of \( \text{LAGMPS} \) on \( \text{EPS} \) (SW) of FMCG firms after global financial melt down” is rejected at 5% level. [The \( F \)- statistics is (25.19) at 1% level with \( R^2 \) (0.98); Adj \( R^2 \) (0.96)].

The regression results are as follows (After Global Financial Melt down)

\[
\text{EPS} = \beta_1 \text{(DPS)} + \beta_2 \text{(RPS)} + \beta_3 \text{(PER)} + \beta_4 \text{(LAGPER)} + \beta_5 \text{(EAR)} + \beta_6 \text{(LAGMPS)} + \epsilon
\]

| Figures in parentheses denote t- value |

\[
(2.59)** \quad (2.25) \quad (0.27) \quad (1.56) \quad (2.05)** \quad (0.39) \quad (2.73)
\]

The result of chow test (vide table 9) reveals that the F-value (3.07 ** 0.01) is greater than the F limit (2.79) at 1% level for df. 7, and 116, hence, \( H_0^6: \) “there is no significant shift in structure in

<table>
<thead>
<tr>
<th>Table 9: Results of Chow test for Structural shift in Dividend Policy on Shareholders’ Wealth between before Global financial melt down (2003 – 2007) and after Global financial melt down (2009 – 2013) of FMCG firms in India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole sample</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Before Global financial melt down</td>
</tr>
<tr>
<td>662.976</td>
</tr>
</tbody>
</table>

** Source**: Computed results based on compiled data from the Annual Financial Reports from moneycontrol.com

*** Significant at 1% level. F – limit for 7,116 degrees of freedom at 1% level is 2.79.
the shareholders’ wealth of FMCG sector in India after global financial melt down” is rejected 1% level, which implies that the FMCG firms have a significant shift -in-structure (improvement positively) in respect of DP on SW after global financial melt down at 1 % level.

6. CONCLUDING REMARKS

This paper is an effort to reveal the insight dynamics for the impact of dividend policy on shareholders’ wealth: Evidence from FMCG sector in India considering global financial melt down as an event. In the light of the previous literature, key explanatory variables were found to disclose the relationship and the impact of DP on SW. The response variable i.e. earnings per share (EPS) is considered as proxy for measuring the shareholders’ wealth. Dividend per share (DPS), retained earnings per share (RPS), price earnings ratio (PER), lagged price earning (LAGPER), earnings (EAR), and lagged market value (LAGMPS) are considered as predictor variables. Out of 16 listed firms on NSE,13 firms are selected using multi stage non-random sampling technique based on the availability of data.

Regression analysis is used as the most appropriate tool for analysis of data. The shift-in-structure in terms of DP on SW considering the event i.e. global financial melt down is studied with the help of Chow test. Descriptive statistics revealed that the data are normal whereas when the assumptions needed to be fulfilled for ordinary least square (OLS) are tested, the data were found to be homoskedastic and free of auto correlation.

Correlation results revealed the relationship between EPS and RPS (0.837); that of between LAGMPS and EPS(0.751) which are highly significant positively at 1% level; whereas the relationship between EPS and DPS (0.617); and that of between EAR and PER (0.659); and that of between LAGMPS and LAGPER (0.585) are significant positively at 5% level before global financial melt down. The relationship between EPS and DPS (0.924); that of between EPSand RPS (0.720); that of between LAGPER and PER (0.946); that of between LAGMPS and DPS(0.706); that of between LAGMPS and RPS (0.876); that of between LAGMPS and EPS (0.827) are highly significant positively at 1% level after global financial melt down, whereas the relationship between DPS and RPS (0.594) is significantly positively at 5% level.

Regression result proves that DPS (121.65) and RPS (9.68) have significant positive coefficient on EPS(SW) before global financial melt down of FMCG firms in India. DPS (76.74), LAGPER (1.52) and LAGMPS (0.27) have significant positive co-efficient (76.74) on EPS(SW) after global financial melt down of FMCG firms in India. Hence, it is inferred from the results that the shareholders’ wealth is dependent on the DPS, RPS, LAGPER, and LAGMPS. On the whole, the results reveal that the selected variables viz DPS, RPS, LAGPER and LAGMPS have significant impact on earnings per share (SW).

The results of the Chow test implies that the FMCG firms in India have a significant shift-in-structure (improvement positively) in respect of DP on SW after global financial melt down (2009 – 2013).
When the firms pay dividend regularly with periodic growth, the SW would be maximized. This is quite possible for all dividend paying firms in FMCG sector in India. The DP has significant effect on SW of FMCG firms. From the analysis it is inferred that dividend per share, retained earnings per share, lagged price earning ratio and lagged market price per share act as important variables in determining the SW. Generally, higher DP enables increase in the market value of equity per share and vice versa. Shareholders preferred current dividend to future income so, dividend is considered to be an important variables, which determines the SW.

Since dividend is an unsolved puzzle there is a need for constant and continuous efforts and attempts in the field of DP research. The explanatory power of the model used was found low through the econometric results implying room for future research works on the subject of research. The study is based on secondary data collected from the money control data source, and websites of various FMCG firms concerned in India. Therefore, the quality of the study depends upon the accuracy, reliability, and quality of secondary data source.

In the study, a sample of 13 FMCG firms is considered for analyzing the impact of dividend policy on shareholders’ wealth. In the study, OLS model of regression and chow test are used for analysis, therefore inclusion of some more appropriate methods of analysis, if used for analysis, will enable a further step in exploring new and further inference in the area of research.

REFERENCES


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