Financial Risk and Management Reviews
2015 Vol. 1, No. 1 pp. 8-26
ISSN(e): 2411-6408
ISSN(p): 2412-3404
DOI: 10.18488/journal.89/2015.1.1/89.1.8.26

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.

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.

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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 that of 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*).

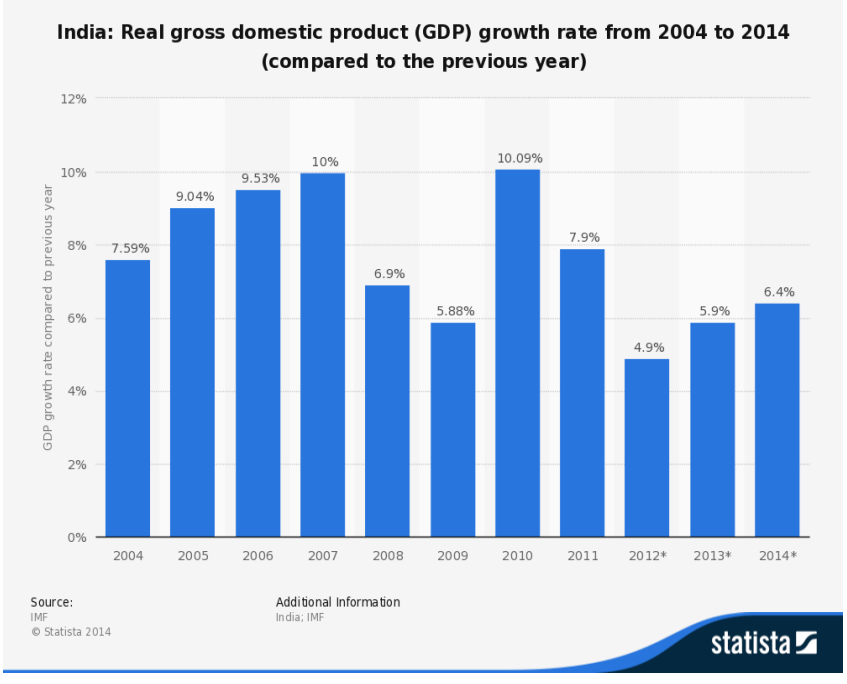

Figure-A. India : Gross domestic product (GDP) growth rate from 2004 to 2014 (in percentage)

Source: IMF Statista 2014

Figure – A depicts the real gross domestic product's (*GDP*) growth rate from 2004 to 2014. The *GDP* rate has decined 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.

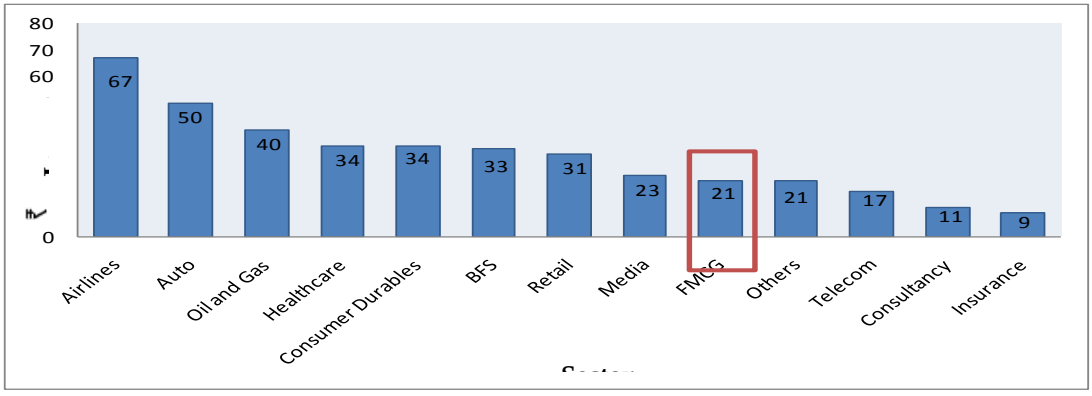

Figure-B. Industry wise impact on global financial melt down chart during the year 2008 (₹ in crore)

Source: Cartesian Economic Meltdown survey, December 2008.

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 C*how-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; o*utsiders' 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 offirms* 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)
- Correlation
- 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

$$EPS = \beta 1\ (DPS) + \beta 2\ (RPS) + \beta 3\ (PER) + \beta 4\ (LAGPER) + \beta 5\ (EAR) + \beta 6\ (LAGMPS) + e \quad \ldots\ldots..(i)$$

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

Sl. No.	Variable / Measure	Formula	Inference
1	Earnings per share (*EPS*)	Net income / Number of equity shares	It represents the capacity of firm to pay dividends. Firm is willing to pay high dividend if it increases profitability.
2	Dividend per share (*DPS*)	Total dividend / No. of equity shares outstanding	The dividend per share reveals how well earnings support the dividend payout.
3	Retained earnings per share (*REPS*)	Retained earnings / No. of equity shares outstanding	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.
4	Price earnings ratio (*PER*)	Market value per share / Earnings per share	High price earnings ratio indicates that investors anticipate high growth in future.
5	Earnings (*EAR*)	Total revenue – Total expenses	Higher the earnings, larger the cash flow and therefore, firms will pay high dividend.
6	Market price per share (*MPS*)	Market capitalization / No. of equity shares outstanding	High market value reflects that the firms are in very good position and lower value reflects otherwise.

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* is0.09 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-2. Descriptive Statistics of Selected Variables of *FMCG* firms in India from 2008 to 2012

Variables	DPS	RPS	PER	LAGPER	EAR	LAGMV	EPS
Mean	0.09	2.02	21.61	21.60	606.66	388.50	22.35
Median	0.08	1.47	21.41	20.14	230.76	223.09	21.06
Maximum	0.24	7.32	35.14	46.53	3598.38	898.79	54.61
Minimum	0.01	0.28	3.12	5.86	70.82	21.05	3.60
Std. Dev.	0.08	1.98	9.95	10.71	1051.61	342.60	16.14
Skewness	0.66	1.58	-0.31	0.73	2.207	0.30	0.70
Kurtosis	2.19	4.63	2.07	3.35	6.36	1.36	2.37
Jarque-Bera	1.36**	6.91**	0.68	1.23	16.67***	1.65	1.28
Probability	0.04	0.03	0.70	0.53	0.00	0.43	0.52
N	13	13	13	13	13	13	13

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

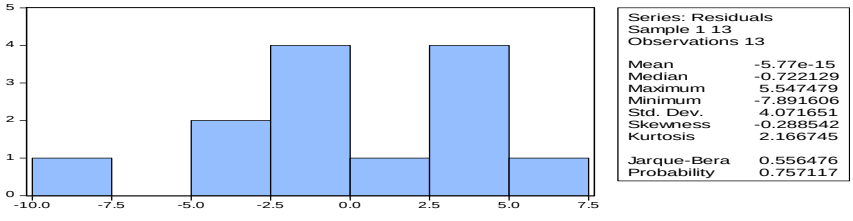

Figure-C. Jarque-Bera Test of Selected Variables of *FMCG* firms in India from 2008 to 2012 (₹ in crore) Normality Test

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. Results of Unit Root Test (Augmented Dickey-Fuller Test)

Variables	ADF(t-Statistic)	Probability
Earnings per share (EPS)	-4.863297***	0.0045
Dividend per share (DPS)	-4.484696***	0.0077
Retained earnings per share (REPS)	-4.185369**	0.0137
Price earning ratio (PER)	-10.31925***	0.0000
Lagged price earning ratio (LAG PER)	-6.475426***	0.0001
Earnings (PAT)	-3.435427***	0.0075
Lagged market value (LAGMV)	-4.703563***	0.0056

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

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

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)*.

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

$$H_0: \delta = 0 \text{ (Unit Root)}$$
$$H_1: \delta \neq 0$$

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. Results of White - Heteroskedasticity Test

F-Statistic	0.326	Probability	0.900
Obs* R-Squared	3.196	Probability	0.783

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

The condition of classic linear regression model (*vide table 4*) implies that there should be 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

F-Statistic	0.779	**Probability**	0.614
Obs* R-Squared	5.696	Probability	0.458

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

F-Statistic	3.537	**Probability**	0.059
Obs* R-Squared	3.135	Probability	0.056

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)

Variables		*DPS*	*RPS*	*PER*	*EPS*	*LAGPER*
EPS	Pearson Correlation	0.617**	0.837 ***			
	Sig. (2-tailed)	0.02	0.000			
	N	13	13			
EAR	Pearson Correlation			0.659**		
	Sig. (2-tailed)			0.014		
	N			13		
LAGMPS	Pearson Correlation				0.751***	0.585**
	Sig. (2-tailed)				0.003	0.036
	N				13	13

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)

Variables		*DPS*	*RPS*	*PER*	*EPS*
EPS	Pearson Correlation	0.924***	0.720 ***		
	Sig. (2-tailed)	0.00	0.00		
	N	13	13		
DPS	Pearson Correlation		0.594**		
	Sig. (2-tailed)		0.032		
	N		13		
LAGPER	Pearson Correlation			0.946***	
	Sig. (2-tailed)			0.00	
	N			13	
LAGMPS	Pearson Correlation	0.706***	0.876***		0.827***
	Sig. (2-tailed)	0.007	0.000		0.00
	N	13	13		13

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

Variables	Unstandardized coefficients beta value					
	Before Global financial melt down			After Global financial melt down		
	B	t-Value	P- Value	β	t-Value	P- Value
Constant (EPS)	-10.91	-1.39	0.212	18.41	2.59**	0.04
DPS	121.65	2.55**	0.03	76.74	2.25**	0.04
RPS	9.68	4.13***	0.006	0.42	0.27	0.79
PER	0.024	0.098	0.925	0.79	1.56	0.16
LAGPER	0.16	0.447	0.671	1.52	2.05**	0.05
EAR	0.005	0.955	0.377	0.001	0.39	0.707
LAGMPS	0.006	0.208	0.842	0.27**	2.73	0.03
Adjusted R^2	0.889			0.96		
R^2	0.94			0.98		
F Statistics	16.680*** (0.002)			25.19***(0.001)		
Degrees of Freedom	6,58			6,58		
Number of observations	65			65		

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, H_0^1: "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, H_0^2: "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 R^2 (0.94); Adj R^2 (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)

Figures in parentheses denote t- value

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

The regression equation infers that there is a significant positive impact of **DPS** and **RPS** on **EPS (SW**) before financial melt down.

The *DPS* has significant positive co-efficient (76.74) on *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 *DPS* on *EPS (SW)* of FMCG firms after financial melt down" is rejected at 5% level. *LAGPER* has significant positive co-efficient (1.52) on *EPS (SW)* of *FMCG* firms after global financial melt down in India. Hence, H_0^4: "there is no significant impact of *LAGPER* on *EPS (SW)* of *FMCG* firms after global financial melt down" is rejected at 5% level. *LAGMPS* has significant positive co-efficient (0.27) on *EPS (SW)* of FMCG firms after global financial melt down in India. Hence, H_0^5: "there is no significant impact of *LAGMPS on 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)

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

(**2.59**)**(**2.25**) **(0.27) (1.56) (**2.05**)** (0.39) (2.73)

Figures in parentheses denote t- value

** Significant at 5% level

The regression equation infers that there is a significant positive impact of DPS, LAGPER and LAGMPS on EPS (SW) after global financial melt down.

5.2. Testing of Structural Shift – Application of Chow Test

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

Whole sample	Sum of square residuals		Number of Parameters Estimated	Number of Observations	F-Value	DF	F - limit
	Before Global financial melt down	After Global financial melt down					
662.976	326.928	232.406	7	130	3.07***	7, 116	$F_{0.01}$ 2.79 (for $V_1 = 7$; $V_2 = 116$)

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 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 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 *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); 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 significant positively at 5% level.

Regression result proves that DPS (121.65) and *RPS* (9.68) have significant positive co-efficient 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.

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