

The Impact of Dividend Policy on Shareholders' Wealth

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Abstract

The present paper is aimed at analyzing the impact of dividend policy of shareholders' wealth in Organic and Inorganic Chemical Companies in India during 1996 – 1997 to 2005-2006. To measure the impact of dividend policy on shareholders' wealth multiple regression method and stepwise regression models are used by taking DPS_{it} (Dividend per Share), RE_{it} (Retained Earnings per Share), Pe_{t-1} (Lagged Price Earning Ratio) and $MPS_{i,t-1}$ (Lagged Market Price) ($MV_{i,t-1}$) as independent variable, and MPS_{it} (Market Price Per Share) as dependent variables. To determine the proportion of explained variation in the dependent variable, the co-efficient of determination (R^2) has been tested with the help of F value. The study proves that the wealth of the shareholders is greatly influenced mainly by five variables viz., Growth in sales, Improvement of Profit Margin, Capital Investment Decisions (both working capital and fixed capital), Capital Structure Decisions, Cost of Capital (Dividend on Equity, Interest on Debt) etc. There is a significant impact of dividend policy on shareholders' wealth in Organic Chemical Companies while the shareholders' wealth is not influenced by dividend payout as far as Inorganic Chemical Companies are concerned.

Keywords: Dividend Paying Companies, Dividend Non-Paying Companies, DPS-Dividend Per Share, MPS-Market Price Per Share

1. Introduction

In an ever-increasing Indian economy, globalization, liberalization and privatization together with rapid strides made by information technology, have brought intense competition in every field of activity. So, Indian companies at present are dazed, confused, and apprehensive¹. To maintain the competitiveness of, and add value to the companies, today's finance managers have to make critical

business and financial decisions which will lead to long-run perspective with the objective of maximizing the shareholders' wealth².

Shareholders' wealth is represented in the market price of the company's common stock, which, in turn, is the function of the company's investment, financing and dividend decision³. Managements' primary goal is shareholders' wealth maximization, which translates into maximizing the value of the company as measured by the price of the company's common stock⁴. Shareholders like cash dividends, but they also like the growth in EPS that results from ploughing earning back into the business⁵s. The optimal dividend policy is the one that maximizes the company's stock price which leads to maximization of shareholders' wealth and thereby ensures more rapid economic growth⁶. The present study is intended to study how far the dividend payout has impact on shareholders' wealth in general; and in particular to study the relationship between the shareholders' wealth and the dividend payout and to analyze whether the level of dividend payout affects the wealth of the shareholders.

2. Statement of the Problems

In India few studies have analyzed the relationship between the shareholders' wealth and dividend payment. Net earnings are divided into two parts – retained earnings and dividends. The retained earnings of the business may be reinvested and treated as a source of long-term funds⁷. The dividend should be distributed to the shareholders in order to maximize their wealth as they have invested their money in the expectation of being made better off financially⁸. Therefore, the present study mainly analyses how far the level of dividend payout affects the shareholders' wealth, particularly in (Organic and Inorganic) Chemical Companies in India.

3. Objectives of the Study

- To study the relationship between dividend payout and shareholders' wealth.
- To analyze the impact of variation in dividend policy on shareholders' wealth of dividend paying and non-paying companies in (Organic and Inorganic) Chemical Companies India.
- To analyze the impact of retained earnings and past performance in the presence of dividend policy on shareholders' wealth of (Organic and Inorganic) Chemical Companies in India.

4. Hypotheses

- **H₁**: “There is no significant difference in average market value relative to book value of equity between dividend payers and non-payers of (Organic and Inorganic) chemical companies.”
- **H₂**: “There is no significant impact of dividend policy on shareholders' wealth in (Organic and Inorganic) chemical companies.”

5. Methodology

5.1. Sources of Data

The study used only secondary data which are collected from CMIE (Centre for Monitoring Indian Economy) prowess package. Analytical method is used for interpreting the data. The data collected from this source have been compiled and used with due care as per the requirements of the study.

5.2. Sampling Design

Originally the sample for this study has been planned to choose from the list of companies listed in National Stock Exchange (NSE). Since the number of companies listed in the NSE is lesser in number (21 companies in Organic and Inorganic Chemical Industry), the sample of 28 companies in Chemical Industry (Organic-19 and Inorganic-9) has been chosen from 114 listed companies in BSE (Bombay

Stock Exchange) using **Multi-Stage Random Sampling Technique**. The sample units have been chosen for the study based on the availability of required financial data like share price, DPS etc.

6. Tools used for Analysis of Data

The equations and variables used for the study are given below:

$$MPS_{it} = a + b DPS_{it} + c RE_{it} + e_{it} \quad (1)$$

$$MPS_{it} = a + b DPS_{it} + c RE_{it} + (PE)_{t-1} + e_{it} \quad (2)$$

$$MPS_{it} = a + b DPS_{it} + c RE_{it} + (MPS)_{it-1} + e_{it} \quad (3)$$

Where,

MPS_{it}	-- Market price per share
DPS_{it}	-- Dividend per share
RE_{it}	-- Retained Earning per share
PE_{t-1}	-- Lagged Price Earning Ratio
MPS_{it-1}	-- Lagged Market Price (MV_{it-1})

The subscript 'i' denotes the i^{th} company in a sample of 'n' companies selected from a particular industry, and all variables are measured in the i^{th} time period. Market price per share is the closing prices for the year.

To analyze the data, the statistical tools that have been used are Mean, Standard Deviation, multiple regression technique and stepwise regression method to ascertain best fitted model for predicting the dividend policy impact on shareholder's wealth. The significance of various explanatory variables has been tested by computing t-values. To determine the proportion of explained variation in the dependent variable, the coefficient of determination (R^2) has been worked out. The significance of R^2 has also been tested with the help of F-Value.

7. Period of the Study

The data used for the analysis are relating to the selected (Organic and Inorganic) Chemical Companies for the period of Ten years (1997-2006).

8. Analysis and Results

8.1. Comparison of Shareholders' Value between Dividend Payers and Non-Payers among Organic Companies

Before going through evaluating the relationship between dividend policy and shareholders' wealth of selected (Organic and Inorganic) chemical companies in India, it has been tried to compare the average wealth of investors between dividend paying and non-paying Organic and Inorganic companies in India. The comparison of mean shareholders' wealth of companies of all types pooled under dividend paying and non-paying companies are also carried out. The mean values between two groups are compared with t-values. The results of the analysis are shown from tables 1 – 3.

Table 1: Year-wise Comparison of Market Value to Book Value of Equity between Dividend Payers and Non-Payers among Organic Chemical Companies in India

Year	Dividend Payers		Dividend Non-Payers		t-value	LS
	Mean	SD	Mean	SD		
1997	1.89	1.55	1.00	1.88	1.13	ns
1998	1.87	1.54	0.98	1.86	1.14	ns
1999	1.90	1.56	0.97	1.83	1.19	ns
2000	1.90	1.58	0.97	1.84	1.18	ns
2001	1.87	1.53	0.99	1.89	1.12	ns
2002	1.83	1.49	0.97	1.82	1.13	ns
2003	1.84	1.50	0.95	1.82	1.16	ns
2004	1.87	1.52	0.98	1.86	1.15	ns
2005	1.82	1.41	0.97	1.89	1.11	ns
2006	1.83	1.43	0.97	1.85	1.14	ns
All Years	1.86	1.44	0.98	1.76	3.81	0.01

SD – Standard Deviation; LS – Level of Significance; ns – Not significant; 0.01 – Significant at 1% level

An examination of the results of year-wise comparison of market value of equity to its book value between dividend payers and non-payers of chemical companies in India (vide table 3) shows that the mean market value of equity relative to book value is well above 1 for all the years under study as well as for pooled years. It has been ranging from minimum of 1.53 in 2005 to 1.60 in 2000 with overall mean of 1.56 for all the years. This shows that the market value is well above the book value for the chemical companies which pay dividend. But the scenario has been slightly different in the case of dividend non-paying chemical companies in India

Table 2: Year-wise Comparison of Market Value to Book Value of Equity between Dividend Payers and Non-Payers among Inorganic Chemical Companies

Year	Dividend Payers		Dividend Non-Payers		t-value	LS
	Mean	SD	Mean	SD		
1997	1.04	0.56	-0.70	1.70	2.39	0.05
1998	1.03	0.54	-0.68	1.62	2.47	0.04
1999	1.05	0.58	-0.71	1.68	2.43	0.05
2000	1.10	0.69	-0.71	1.68	2.38	0.05
2001	1.10	0.72	-0.76	1.75	2.36	0.05
2002	1.07	0.65	-0.77	1.85	2.29	ns
2003	1.07	0.66	-0.74	1.75	2.35	0.05
2004	1.07	0.63	-0.69	1.68	2.38	0.05
2005	1.05	0.59	-0.87	1.98	2.32	0.05
2006	1.06	0.60	-0.93	2.07	2.31	0.05
All Years	1.06	0.58	-0.75	1.48	8.36	0.00

SD – Standard Deviation; LS – Level of Significance; ns – Not significant; < 0.01 – Significant at 1% level; > 0.01 and ≤ 0.05 – Significant at 5% level.

An average market value relative to book value is <1, revealing marginal increase in wealth of the investors of these companies. The mean values vary between 0.50 in 2006 to 0.57 in 1997 and 1998. The decline in mean value in 2006 has indicated the decline in wealth of the investors during the period. However, comparison of mean values between dividend payer and non-payer under chemical sector (Organic and Inorganic) revealed that the wealth creation in each year does not show any significant difference. However, in the long-run, the difference is highly significant at 1 per cent level ($t = 5.49$, $p < 0.01$ for all years).

H₁: “There is no significant difference in average market value relative to book value of equity between dividend payers and non-payers of (Organic and Inorganic) chemical companies in India.”

Table 3: Year-wise Comparison of Market Value to Book Value of Equity Between Dividend Payers and Non-Payers among Organic and Inorganic Chemical Companies

Year	Dividend Payers		Dividend Non-Payers		t-value	LS
	Mean	SD	Mean	SD		
1997	1.57	1.32	0.57	1.92	1.63	ns
1998	1.56	1.30	0.57	1.89	1.64	ns
1999	1.58	1.33	0.55	1.88	1.70	ns
2000	1.60	1.35	0.55	1.89	1.71	ns
2001	1.58	1.31	0.55	1.94	1.68	ns
2002	1.54	1.27	0.54	1.91	1.68	ns
2003	1.55	1.28	0.53	1.89	1.71	ns
2004	1.57	1.30	0.56	1.90	1.67	ns
2005	1.53	1.20	0.51	2.00	1.67	ns
2006	1.54	1.22	0.50	2.00	1.71	ns
All Years	1.56	1.25	0.54	1.85	5.49	0.00

SD – Standard Deviation; LS – Level of Significance; ns – Not Significant;
 < 0.01 – Significant at 1% level; > 0.01 and ≤ 0.05 – Significant at 5% level.

The H_1 is rejected. Therefore, it is found that in the long-run, wealth of shareholders of dividend paying chemical companies has increased significantly when compared to that of the dividend non-paying counterparts, which further shows the impact of dividend policy on wealth creation. Hence H_1^1 stands: “There is significant difference in average market value relative to book value of equity between dividend payers and non-payers of (Organic and Inorganic) chemical companies in India.”

8.2. Relationship between Dividend Policy and Shareholders' Wealth

Dividend Paying Organic Chemical Companies

Table 4: Results of Regression showing the Impact of Dividend Policy on Market Value of Equity of ALL DIVIDEND PAYING ORGANIC CHEMICAL COMPANIES in India
Dependent Variable: Market Price of Share (MV)

Independent Variables	Regression Model			
	1	2	3	4
Intercept	13.67 (1.56)	13.84 (1.52)	17.93 (1.67)	-14.42*** (-2.80)
Dividend per share (DPS)	92.68*** (4.88)	92.81*** (4.84)	94.57*** (4.66)	32.34*** (3.08)
Retained Earnings (RE)		-0.03 (-0.07)	-0.07 (-0.16)	-0.21 (-1.01)
Lagged Price Earning Ratio (PE_{t-1})			-0.33 (-1.07)	
Lagged Market Value of Share (MV_{t-1})				1.38 (0.08)
R^2	0.1952	0.1953	0.2060	0.8112
Adjusted R^2	0.1870	0.1787	0.1783	0.8046
F value	23.77***	11.77***	7.44***	123.15***
Degrees of freedom	1,98	2,97	3,86	3,86

Figures in parentheses show t-values

*Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

The impact of dividend policy on shareholders' wealth of organic and inorganic chemical companies with adoption of dividend policy has been elicited using multiple regression analysis. The Dividend per share (DPS) has been used as proxy for measuring the dividend policy of the companies and Market value (MV) of equity of the companies under study is considered as proxy for measuring the shareholders' wealth and used as dependent variable. Apart from DPS, Retained earnings (RE), lagged Price-Earning Ratio (PE_{t-1}) and lagged Market value of equity (MV_{t-1}) are also used as

explanatory variables in order to know whether dividend policy of Organic and Inorganic chemical companies are dominated by these factors in influencing the creation of shareholders' wealth.

Table 4 shows the regression results for all selected organic chemical companies in India with regard to impact of initiating dividend payout on shareholders' wealth. Perusal of the results indicates that the fit of all four models is significant at 1 per cent level ($F = 23.77$, $p < 0.01$ for model 1, $F = 11.77$, $p < 0.01$ for model 2, $F = 7.44$, $p < 0.01$ for model 3 and $F = 123.15$, $p < 0.01$ for model 4). Among the four models, F value for model 4 is very high. Further, the coefficients of DPS in all four models are highly significant at 1 per cent level and positive in sign ($\beta = 92.68$, $t = 4.88$, $p < 0.01$ in model 1; $\beta = 92.81$, $t = 4.84$, $p < 0.01$ in model 2; $\beta = 94.57$, $t = 4.66$, $p < 0.01$ in model 3; and $\beta = 32.34$, $t = 3.08$, $p < 0.01$ in model 4).

Also, from the perusal of adjusted R^2 values, it is clear that the explanatory variables in the model 4 could together explain 80.46 per cent of the variance in market value, whereas explanatory variables in model 1, 2 and 3 could, together, explain 18.70 per cent, 17.87 per cent and 17.83 per cent respectively of the variance in dependent variable Hence, model 4 is the appropriate one for the final interpretation.

Interestingly, the coefficient of DPS in model 4, though statistically significant, has declined considerably in the presence of RE and lagged MV, even though the coefficients of those variables are insignificant. Also, the intercepts, which are insignificant in the first three models, become significant in model 4, indicating that there are some factors inherent in the market dominated over dividend policy when market has started considering RE and lagged MV of organic chemical companies under chemical sector.

H₂: "There is no significant impact of dividend policy on shareholders' wealth in Organic Chemical Companies in India."

Table 5: Results of Regression showing the Impact of Dividend Policy on Market Value of Equity of ALL DIVIDEND PAYING INORGANIC CHEMICAL COMPANIES in India
Dependent Variable: Market Price of Share (MV)

Independent Variables	Regression Model			
	1	2	3	4
Intercept	225.47* (2.46)	88.33 (0.95)	11.74 (0.14)	26.28 (0.30)
Dividend per share (DPS)	69.49 (1.56)	154.28*** (3.26)	128.95*** (3.15)	79.37 (1.58)
Retained Earnings (RE)		77.48*** (3.51)	103.65*** (5.34)	61.02*** (2.76)
Lagged Price Earning Ratio (PE_{t-1})			17.47*** (4.41)	
Lagged Market Value of Share (MV_{t-1})				0.42*** (3.34)
R^2	0.0403	0.2109	0.4790	0.4104
Adjusted R^2	0.0238	0.1832	0.4477	0.3750
F value	2.43	7.62***	15.32***	11.60***
Degrees of freedom	1,58	2,57	3,50	3,50

Figures in parentheses show t-values

*Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

H₂ is rejected, and it is found that the significant coefficient of DPS in model 4 (Adjusted R^2 is 80.46 per cent), the model of best fit, has led to the conclusion that initiation of dividend payments by the Organic Chemical companies has significant positive impact on their shareholders' wealth during the last decade.

Hence, **H₂¹** stands: "There is significant impact of dividend policy on shareholders' wealth in Organic Chemical Companies in India."

8.3. Dividend Paying Inorganic Chemical Companies

The impact of initiating dividend payments by the Inorganic chemical companies on their shareholders' wealth have been analyzed using multiple regression analysis using Market value as dependent variable and RE, lagged PE and lagged MV in addition to DPS as explanatory variables. Regarding the effect of dividend initiation of all dividend paying inorganic chemical companies on creation of wealth to their shareholders, the regression results presented in Table 5 indicate that the initiation of dividend payout has failed to influence the market value alone as the coefficient of DPS in model 1 is insignificant.

Moreover, model 1 is not fitted significantly. On the other hand, the coefficient of DPS in model 2 ($\beta = 154.28$, $t = 3.26$, $p < 0.01$) and model 3 ($\beta = 128.98$, $t = 3.15$, $p < 0.01$) is significant. Also, the coefficient of RE, 77.48 in model 2 ($t = 3.51$, $p < 0.01$) and 103.65 in model 3 ($t = 5.34$, $p < 0.01$) is also significant at 1 per cent level. Further, lagged PE in model 3 has also unique influence ($\beta = 17.47$, $t = 4.41$, $p < 0.01$) on market value.

9. Summary and Concluding Remarks

This study attempts to answer to the question: Is there any Impact of Dividend Policy on Shareholders' Wealth? The main purpose of the study is to shed some light on the above association. To test the relationship between the dividend policy and the shareholders' wealth, first the average wealth of investors (shareholders) is compared between the dividend paying and non-paying companies. (Mean values between two groups are compared with t-test).

Table 6: Results of Regression showing the Impact of Dividend Policy on Market Value of Equity of ORGANIC AND INORGANIC CHEMICAL COMPANIES in India
Dependent Variable: Market Price of Share (MV)

Independent Variables	Regression Model			
	1	2	3	4
Intercept	92.49*** (2.60)	89.32** (2.35)	62.88 (1.50)	48.50 (1.45)
Dividend per share (DPS)	81.11*** (3.00)	81.77*** (3.00)	77.89*** (2.83)	-1.83 (-0.07)
Retained Earnings (RE)		0.59 (0.24)	1.25 (0.50)	0.78 (0.37)
Lagged Price Earning Ratio (PE_{t-1})			2.11 (1.35)	
Lagged Market Value of Share (MV_{t-1})				0.58*** (7.97)
R ²	0.0540	0.0543	0.0744	0.3553
Adjusted R ²	0.0480	0.0423	0.0546	0.3415
F value	9.01***	4.51**	3.75**	25.72***
Degrees of freedom	1,158	2,157	3,140	3,140

Figures in parentheses show t-values

*Significant at 10% level; **Significant at 5% level; ***Significant at 1% level

The company which paid dividend for three years or >3 years during the study period (1997 – 2006) is treated as dividend paying company, otherwise non-paying company. And it is found that there is significant difference in average market value relative to book value of equity between dividend payers and non-payers of (organic and inorganic) chemical companies.

The dependent variable i.e. Market price of share (MV) is considered as proxy for measuring the shareholders' wealth and Dividend per share (DPS) has been used as proxy for measuring the dividend policy of the firm as an independent variable. Apart from that Retained Earnings (RE), Lagged Price-earning ratio (PE_{t-1}) and Lagged Market Value of equity (MV_{t-1}) are also used as

explanatory variables. The Multiple regression technique and stepwise regression method have been used to ascertain the best fitted model for predicting the dividend policy and shareholders' wealth.

Generally, higher dividend increases the market value of the share and vice versa. Shareholders preferred current dividend to future income so, dividend is considered as an important factor which determines the shareholders' wealth. This is normally true in case of salaried individuals, retired pensioners and others with limited incomes. Dividend has information content and the payment of dividend indicates that the company has a good earning capacity. The wealth of the shareholders is greatly influenced mainly by five variables viz., Growth in Sales, Improvement of Profit Margin, Capital Investment Decisions (both working capital and fixed capital), Capital Structure Decisions, Cost of Capital (Dividend on Equity, Interest on Debt) etc. As far as the dividend paying companies are concerned, there is a significant impact of dividend policy on shareholders' wealth in Organic Chemical Companies. Whereas, as far as the Inorganic Chemical Companies are concerned, the shareholders' wealth is not influenced by the dividend payout.

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