

Impact of Market-Related Variables on Corporate Dividend Decision

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Abstract

This study examines the impact of market to book ratio, annual sales growth, market risk, institutional holdings, size of the firm, free cash flow and leverage on the dividend decision of the firm. This paper also studies the impact of dividend, size of the firm, market risk and promoters' holdings on the value of the firm. The sample of the study is non-financial companies of S & P CNX Nifty. The study period covered is 2001-2009. The cross sectional regression results for the pooled data show that there is positive impact of market to book ratio, annual sales growth, institutional holdings, size of the firm and free cash flow, and negative impact of leverage on dividend decision of the firm. There is no support for the negative impact of market risk on the dividend decision of the firm. The study finds that value of the firm is positively associated with dividend decision and promoters' holdings. But there is no support for the negative impact of market risk and for positive impact of size of the firm on the value of the firm.

I. Introduction

SUCCESSFUL COMPANIES EARN income. This income can be invested in operating assets, used for acquisition of securities, used for retirement of debt, or distribution to shareholders. The distribution of income to shareholders is the dividend. By dividend policy, we mean the payout policy that managers follow in deciding the size and pattern of cash distribution to shareholders over time. In seminal paper, Miller and Modigliani (MM) (1961) argued that given perfect capital markets, the dividend decision does not affect the firm value and is, therefore, irrelevant. Academicians and researchers have developed many theoretical models and suggested that a properly managed dividend policy had an impact on share prices and shareholder wealth.

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After the findings of MM, other researchers have relaxed their assumption of perfect capital markets. Theories have been developed about how dividend affects the firm value and how managers should formulate dividend policy decisions. There is a substantial increase in the number of factors that have been considered to be important in making dividend decisions. There has been emerging consensus that there is no single explanation of dividends.

In this paper, an attempt has been made to study the impact of investment opportunities, size of the firm, institutional holdings, market risk, free cash flow and leverage on the dividend policy and the influence of dividend policy on the value of the firm. This paper defines dividend policy as the ratio of equity dividend-to-equity paid-up capital and the value of the firm as Tobin's q . This study is conducted on the constituents of S & P CNX Nifty which are National Stock Exchange of India Limited (NSE) listed companies. This study is conducted with the following specific objectives:

- To ascertain the impact of investment opportunities, size of the firm, market risk and agency cost variables on the corporate dividend decision.
- To ascertain the impact of dividend policy, size of the firm, market risk and promoters' holdings on the value of the firm.

The remaining portion of this paper is organised as follows: Section 2 deals with review of literature. Section 3 explains sample, scope, data source, variables and methodology of the study. Section 4 contains empirical results and analysis. Section 5 presents the conclusions of the study.

II. Literature Review

Many studies have been conducted on the dividend decision and fundamental security analysis in India and outside. Pruitt and Gitman (1991) find that risk (year-to-year variability of earnings) determines firms' dividend policy. A firm that has relatively stable earnings is often able to predict approximately what its future earnings will be. Such a firm is therefore likely to pay out a higher percentage of its earnings than a firm with fluctuating earnings. In other studies, Rozeff (1982), Lloyd, Jahera and Page (1985), and Collins, Saxena and Wansley (1996) used beta value of a firm as an indicator of its market risk. They found statistically significant and negative relationship between beta and the dividend payout. Their findings suggest that firms having a higher level of market risk will pay out dividends at lower rate. D'Souza and Saxena (1999) also finds statistically significant and negative relationship between beta and dividend payout. Amidu and Abor (2006) find negative and insignificant association between beta and dividend payout. Anil and Kapoor (2008) find statistically significant and positive relationship between beta and dividend payout.

Jensen and Meckling (1976) advanced the agency theory to explain the dividend relevance. They show that agency costs arise if management serves its own interests and not those of outside shareholders. They suggest that using more debt reduces the scope of manager- stockholder conflict. Rozeff (1982), Easterbrook (1984) and Collins et al. (1996) also extended the theory

by providing the agency-cost explanation of dividend policy, which is based on the observation that firms pay dividend and raise capital simultaneously. A high dividend payout ratio will result in lower "discretionary" cash flows available to be squandered away by managers. Easterbrook (1984) argues that increasing dividends raises the probability that additional capital will have to be raised externally on a periodic basis and consequently, the firm will be subject to the constant monitoring by experts and outside suppliers in the capital markets. Monitoring by outside suppliers of capital also helps to ensure that managers act in the best interest of outside shareholders. Thus dividend payments may serve as a means of monitoring management performance. Rozeff (1982) presents evidence that dividend payout level is negatively related to its level of insider holdings. Jensen, Solberg, and Zorn (1992) and Collins et al. (1996) confirm that the relationship between dividend payout and insider holding is negatively related. D'Souza and Saxena (1999) however found statistically significant and negative relationship between institutional shareholding and dividend payout. Amidu and Abor (2006) found negative and insignificant association between institutional shareholding and dividend payout.

The free cash flow hypothesis of Jensen (1986) asserts that funds remaining after financing all positive net present value projects cause conflicts of interest between managers and shareholders. Payment of dividends and debt interest decrease the free cash flow available to managers to invest in marginal net present value projects and manager perquisite consumption. Alli et al. (1993) reveal that dividend payments depend more on cash flows, which reflect the company's ability to pay dividends, than on current earnings, which are less heavily influenced by accounting practices. They claim current earnings do not really reflect the firm's ability to pay dividends.

According to the Miller and Modigliani (1961) hypothesis, under the assumptions of perfect capital markets, rational behavior, no taxation and transaction costs, it is the investment policy that determines the firm value while the dividend policy is irrelevant. Green, Pogue and Watson (1993) question the irrelevance argument and investigate the relationship between dividends and investment and financing decisions. They find that dividend decisions are neither totally residual nor totally independent. Rather simultaneous consideration is given to investment and financing policies along with a desire for dividend stability. Their results however, do not support the views of Miller and Modigliani (1961).

Higgins (1972) shows that payout ratio is negatively related to a firm's need for funds to finance growth opportunities. Lloyd et al. (1985), Collins et al. (1996) and Rozeff (1982) show a significantly negative relationship between historical sales growth and dividend payout. D'Souza and Saxena (1999) however shows a positive but insignificant relationship in the case of sales growth and negative but insignificant relationship in the case of market-to-book value. Anil and Kapoor (2008) show negative and

insignificant relationship in the case of sales growth and market-to-book value. Amidu and Abor (2006) found negative and significant association with dividend payout in the case of sales growth and market-to-book value.

The above literature survey reveals that the dividend decision of a firm is influenced by investment opportunities, free cash flows, leverage, size of the firm, institutional holdings and market risk. Therefore, an attempt has been made in this study to ascertain the impact of these variables on dividend policy and also the impact of dividend policy on the value of the firm.

III. Data and Methodology

3.1 Sample and Data

The constituents of S & P CNX Nifty as on 31/03/2009 have been used as the sample of the study. Financial companies which are the constituents of the index have been excluded. The number of non-financial companies used in the study is 42, consisting of companies belonging to varied industry groups such as aluminum, cellular mobile phone service, cement, cigarettes, computer software, construction of buildings (residential), construction of other industrial plants, construction of roads, bridges, tunnels etc., copper, cosmetics and toilet preparations, drug formulations, finished steel (non-alloy steel), heavy commercial vehicles, LNG storage & distribution, motorcycles, passenger cars, petroleum oil, petroleum products (refineries), power transmission line services, prime movers, switchgears, switching apparatus, thermal electricity, utility vehicles including jeeps, and wind turbines (wind electricity generator). The financial and banking firms are eliminated from the sample as their characteristics are distinct from those of other firms. The details of the sample are given in Annexure-1. The number of companies varies from 28 in 2001 to 38 in 2009 depending upon the data availability. The pooled data set consists of 295 firm-year observations.

The study period is from 2000-2001 to 2008-2009. The audited financial results, market related data and information relating to share holding pattern have been collected from Prowess, the corporate database of the Centre for Monitoring Indian Economy Private Limited (CMIE).

3.2 Variables and Hypotheses

The explained variables used are equity dividend to equity paid-up capital (D/P) as a proxy for dividend policy and Tobin's q as a proxy for firm's value. Tobin's q (Tq) is computed as the sum value of market value of equity, preference share capital and the value of the firm's short-term liabilities net of its short-term assets plus the book value of the firm's long-term debt, divided by the book value of total assets. This is the simple approximation of Tobin's q as used in Chung and Pruitt (1994).

The explanatory variables used in the regression equations with D/P as the explained variable are as follows:

- i. Sales growth (SGROWTH):- Sales growth has been calculated as current year sales minus previous year' sales divided by previous year's sales.

Sales growth has been used as a proxy for investment opportunities as used in Higgins (1972), Roseff (1982), Holder et al (1998), D' Souza and Saxena (1999), Anil & Kapoor (2008) and Amidu and Abor (2006). It is expected that higher sales growth is associated with higher investment opportunities which may result in lesser dividends.

- ii. Market equity to book equity (ME/BE): The ratio of market value of equity to the book value of equity share holders' equity has been used as a proxy for investment opportunities as used in D' Souza and Saxena (1999), Anil & Kapoor (2008) and Amidu and Abor (2006). It is expected that higher ME/BE is associated with higher investment opportunities which may result in lesser dividends.
- iii. Size (SIZ):- Natural log of sales has been used as a proxy for size. This has been in various studies, such as Holder et al (1998), Bathala, Moon, and Rao (1994) and Ganguli and Agrawal (2009). It is expected that there is positive relationship between size of the firm and dividend policy.
- iv. Market risk (MR): Amidu and Abor (2006) and Stacescu (2006) found that there is negative relationship between firms beta and dividend policy. Therefore, it is expected that higher the risk, lesser is the chance of payment of dividends.
- v. Leverage (LEV)-We use the ratio of book value of long-term debt to the sum of book value of long term debt and equity shareholders' equity as a proxy for leverage. Higher debt leads to higher interest payments and repayment of principal amount which results in lower dividend payments. Toy et al (1974) used liabilities to total assets in the study.
- vi. Institutional Holdings (INST): Institutional Holdings is defined as the proportion of shares owned by institutions at the end of the year. Larger Institutional Holdings engender greater monitoring efforts, thereby, restraining the opportunistic behavior by managers. This serves to mitigate the agency costs of the firm, permitting the firm to utilize less debt. Less amount of debt boosts payment of dividends. This variable has been used in the previous studies (Amidu and Abor (2006), D' Souza and Saxena (1999), Kauki & Guizani (2009) and Stacescu (2006).
- vii. Free cash flow (FCF):- Following Holder et al (1998) and Kauki & Guizani (2009), free cash flow is used in the study as an explanatory variable. Free cash flow is defined as profit after tax plus depreciation plus interest minus capital expenditure, divided by total assets. Free cash flow is used as a proxy for agency costs. Higher amount of free cash flow instigates managers to use them for personal benefits. Thus, free cash flow reduces the agency costs by making available the funds for dividend payments.

The explanatory variables used in the regression equations with Tobin' q as the explained variable are as follows:

- i. Equity dividend to equity paid-up capital (D/P): It is expected that higher the dividend payments, higher is the value of the firm.
- ii. Size (SIZ): It is expected that higher the size of the firm, higher is its value.

- iii. Market risk (MR): It is expected that there is negative relationship between stock's beta and value of the firm.
- iv. Promoter's holdings (PROM): It is defined as the proportion of shares owned by promoters at the end of the year. It is expected that there is positive relationship between promoters' holdings and value of the firm.

3.3 Methodology

The study is conducted under three models. The analysis has been made for each year and for pooled data set. Model-1 and Model-2 use the equity dividend to equity paid-up capital as the explained variable. Model-3 uses Tobin's q as the explained variable. Model-1 on dividend policy includes ME/BE and SGROWTH which are used as proxies for investment opportunities, stock's beta which is used as a proxy for market risk and INST which is used as a proxy for agency cost as the explanatory variables. Model-2 on dividend policy includes ME/BE as proxy for investment opportunities, FCF and INST as proxies for agency cost, size of the firm, and leverage as the explanatory variables. Model-3 on value of the firm includes dividend to paid up capital, size of the firm, promoters' holdings and market risk as the explanatory variables. Summary statistics (average) of different variables, correlation matrix and multiple regressions are used in the study. The three models used are:

$$\frac{D}{P} = \alpha + \beta_1 \frac{ME}{BE} + \beta_2 INST + \beta_3 SGROWTH + \beta_4 MR + \varepsilon \quad (1)$$

$$\frac{D}{P} = \alpha + \beta_1 \frac{ME}{BE} + \beta_2 SIZ + \beta_3 FCF + \beta_4 INST + \beta_5 LEV + \varepsilon \quad (2)$$

$$Tq = \alpha + \beta_1 \frac{D}{P} + \beta_2 SIZ + \beta_3 PROM + \beta_4 MR + \varepsilon \quad (3)$$

Summary statistics (averages) of different variables for each year and all years taken together is shown in Table I. Karl Pearson's correlation matrix for the pooled data is shown in Table II. Multiple regression (ordinary least square) is constructed under three models for each year and for pooled data set as shown in Table III.

IV. Empirical Results

Summary statistics (Table I) shows that D/P is almost consistent from 2005 onwards and, between 2001 and 2004 D/P fluctuates. Value of the firm measured in the form of ratio is greater than one in six out of nine years. If Tobin's q is greater than 1.0, then the market value is greater than the value of the company's recorded assets. This suggests that the market value reflects some unmeasured or unrecorded assets of the company. High Tobin's q values encourage companies to invest more in capital because they are "worth" more than the price they paid for them (Chung and Pruitt (1994)). The average dividend to capital ratio is 2.17 which indicate that for every one rupee of capital the average dividend paid is Rs.2.17. The average Tobin's q is 1.58. The average growth rate in sales is 23.81 and the average market to book values for the firms is 3.15. Average percentage of institutional holdings is 29%, suggesting that 29% of company's shares are held by institutional investors. Free cash flow on average is 0.09 and size of the firm, determined as the natural logarithm of sales, has mean of 8.88. Average percentage of

promoters' holdings is 48%. This means that 52% of company's shares are held by non-promoters. Leverage has an average value of 24%. All these averages are for nine years taken together.

Table I
Summary Statistics of the variables used in the study

	D/P	Tq	ME/BE	SIZ	FCF	INST	PROM	LEV	SGROWTH	MR	N
2001	0.76	1.24	2.02	8.00	0.09	0.28	0.41	0.21	0.26	0.80	28
2002	1.22	0.86	1.53	8.14	0.09	0.28	0.41	0.26	0.17	0.91	28
2003	1.47	0.81	1.41	8.36	0.11	0.28	0.45	0.27	0.22	0.83	29
2004	3.10	0.98	1.98	8.56	0.11	0.31	0.45	0.26	0.20	0.95	30
2005	2.41	1.26	2.44	8.85	0.08	0.29	0.49	0.27	115.78	1.16	33
2006	2.73	1.73	3.23	9.01	0.09	0.31	0.50	0.22	0.23	1.04	35
2007	2.41	2.41	4.61	9.32	0.08	0.30	0.51	0.23	85.02	1.04	36
2008	2.62	2.66	6.10	9.44	0.08	0.29	0.52	0.21	0.29	0.94	38
2009	2.33	1.73	3.64	9.61	0.05	0.28	0.54	0.21	0.15	1.03	38
2001-2009 (pooled)	2.17	1.58	3.15	8.88	0.09	0.29	0.48	0.24	23.81	0.97	295

Note: N denotes number of firms from 2001 to 2009 and number of observations for 2001-2009.

The Karl Pearson's correlation matrix for the pooled data (Table II) shows that there is low multicollinearity among the explanatory variables except in the case of PROM and INST. The negative correlation between promoter's holdings and institutional holdings is high and in case of all other explanatory variables, the correlation is less than 0.05. Therefore, one of these two variables is used in the model.

Table II
Correlation matrix of the explanatory variables used in regression for 2001-2009

	ME/BE	SIZ	FCF	INST	PROM	LEV	SGROWTH	MR
ME/BE	1.000	0.1088***	0.3189*	-0.0576	0.1231**	-0.2441*	0.0176	-0.04484
SIZ	0.1088***	1.0000	-0.0410	0.1166**	0.0656	-0.0540	0.0213	0.074617
FCF	0.3189*	-0.0410	1.0000	0.0212	0.0188	-0.4434*	-0.1093***	-0.055130
INST	-0.0576	0.1166**	0.0212	1.0000	-0.8527*	0.0742	-0.0937	-0.092360
PROM	0.1231**	0.0656	0.0188	-0.8527*	1.0000	-0.1911*	0.0998***	0.121106
LEV	-0.2441*	-0.0540	-0.4434*	0.0742	-0.1911*	1.0000	-0.0178	0.158901
SGROW	0.0176	0.0213	-0.1093***	-0.0937	0.0998***	-0.0178	1.0000	0.005176
MR	-0.0448	0.0746	-0.0551	-0.0924	0.1211**	0.1589*	0.0052	1.000000

Note: *** denotes 10% level of significance,

** denotes 5% level of significance and

* denotes 1% level of significance. This is applicable to Table III also.

Regression results (Table III) for pooled data set show that Model-1 explains the dividend policy significantly and all the variables including are significant either at 1% or 5% or 10% level of significance. But the positive relationship of ME/BE and SGROWTH with dividend policy is opposite to what is expected in the study. This means that if the investment opportunities are higher, Nifty companies do not postpone the dividend payments. The relationship of INST with the dividend policy is positive and it is in agreement with our hypothesis. There is no statistical support for the negative impact of market risk on dividend policy. Similar results are observed in 2001 and the negative impact of market risk on dividend policy is significant at 10% in 2001 and this supports our hypothesis. The explanatory power of the Model-1 is 69.9% in 2001 where as it is very weak for the pooled data, i.e., 10%. In 2002 and 2003, only ME/BE is significant. But the signs of their coefficients are opposite to what is hypothesized even though the explanatory power of the Model-1 is 38.9% and 45.9%

respectively. In 2005, the model is significant and the explanatory variables explain about 24% of the variation in dividend policy but none of the explanatory variables is significant. In 2004, 2006, 2007, 2008 and 2009, the model is not significant in explaining the dividend policy.

In Model 2, the impact of ME/BE on dividend policy is significant in 2001, 2002, 2003 and for the pooled data. But the positive sign of the coefficient is not in line with our hypothesis. Size of the firm influences the dividend policy positively and significantly at 10% in case of pooled data. Free cash flow impacts dividend policy positively and significantly in 2003, 2008, and 2009 and for the pooled data. This is according to our expectation which implies that dividend payments reduce the agency costs involved in high amount of free cash flow. The impact of leverage on dividend policy is negative and significant at 5% level of significance in the case of pooled data. This confirms with our expectation and it implies that high amount of long term debt results in lower dividend payments. However, the explanatory power of the Model-2 is 57% and 52.5% in 2001 and 2003 respectively and 21% in the case of pooled data. But is not significant in any year. Model-2 is not significant in explaining the dividend policy in 2004, 2005, 2006 and 2007.

Table III
Year-wise and pooled regression results

Model-1	α	ME/BE	INST	SGROWTH	MR	Adj R ²	D-W	F	Sig.	
2001	0.575**	0.144*	1.078**	0.402***	-0.646***	0.699	1.445	16.71*	0.000*	
2002	0.246	0.394*	1.351	1.001	-0.200	0.389	1.962	5.29*	0.004*	
2003	-0.403	0.641*	1.180	1.790	0.290	0.459	2.180	6.93*	0.001*	
2004	-3.517	0.437	5.294	8.066	2.604	-0.042	1.880	0.710	0.596	
2005	0.631	0.244	4.046	0.002	-0.231	0.241	1.663	3.55**	0.018**	
2006	2.601	0.224	0.612	1.102	-0.994	-0.070	1.903	0.445	0.775	
2007	2.120	0.242	0.011	0.000	-0.753	0.044	1.695	1.399	0.257	
2008	3.958***	0.097	2.162	0.219	-2.791	0.065	1.871	1.646	0.186	
2009	3.490***	0.159	0.060	1.790	-1.961	0.100	1.795	2.032	0.113	
2001-2009(pooled)	1.112**	0.215*	2.284***	0.001**	-0.316	0.093	1.89	8.59*	0.000*	
Model-2	α	ME/BE	SIZ	FCF	INST	LEV	Adj R ²	D-W	Sig.	F
2001	-0.453	0.122*	0.084	0.308	1.179***	-0.294	0.571	1.591	0.000*	8.201
2002	-0.584	0.335*	0.086	3.016	1.299	-0.143	0.379	2.003	0.007*	4.302
2003	-1.768	0.352**	0.066	14.876**	0.278	1.654	0.525	1.670	0.000*	7.183
2004	3.015	0.155	0.030	18.836	-1.375	-8.304	0.153	1.780	0.108	2.046
2005	0.967	0.236	0.124	2.433	1.919	-3.729	0.004	1.676	0.420	1.029
2006	2.273	0.042	0.008	8.992	0.766	-3.683	0.061	1.718	0.239	1.443
2007	0.878	0.157	0.113	3.737	0.985	-3.675	0.124	1.512	0.109	1.987
2008	-4.404	0.046	0.412	20.451*	4.227	-0.538	0.298	1.810	0.005*	4.134
2009	-3.874	0.029	0.523	16.123*	1.029	0.106	0.247	1.698	0.014*	3.421
2001-2009(pooled)	-1.544	9.013*	0.111*	0.290**	1.811	-2.181**	0.209	1.743	0.000*	16.578
Model-3	α	D/P	SIZ	FROM	MR	Adj R ²	D-W	F	Sig.	
2001	-1.229	2.164*	-0.229	1.524	2.557*	0.591	1.625	10.77*	0.0*	
2002	-0.759	0.476*	0.081	0.413	0.238	0.325	2.306	4.23**	0.01**	
2003	-0.136	0.342*	0.031	0.204	0.113	0.314	0.890	4.21**	0.01**	
2004	0.844	0.112	-0.015	0.886	-0.130	0.054	2.356	1.45	0.243	
2005	0.844	0.112	-0.015	0.886	-0.130	0.054	2.356	1.45	0.243	
2006	1.888	0.129	-0.274	-0.013	-0.251	-0.030	1.746	0.75	0.566	
2007	5.443***	0.328*	-0.289	-0.543	-0.8210	0.169	1.630	2.79**	0.044**	
2008	8.436*	0.160**	-0.608*	1.202	-1.158**	0.292	1.755	4.82*	0.004*	
2009	6.275*	0.110**	-0.355**	-0.316	-1.188***	0.347	1.809	5.92*	0.001*	
2001-2009 (pooled)	0.176	0.161*	0.088	0.732**	-0.078	0.115	1.697	10.58*	0.000*	

Model 3 in Table III explains the influence of dividend policy on the value of the firm by using the size of the firm, promoter's holdings and market risk as other explanatory variables. In six of nine years for the year-wise data and for the pooled data, there is positive and significant relationship between dividend policy and value of the firm at 5% level of significance. This is in line with our hypothesis and it proves that higher the dividend payment, higher is the value of the firm. MR is significant in influencing the value of the firm, but with positive sign in 2001 and MR is not significant in any remaining years. In 2007, 2008 and 2009, is positive and significant at 10% level of significance. In 2008 and 2009, there is statistical support for the negative impact of market risk on the value of the firm which agrees with our hypothesis. This implies higher the risk lower is the value of the firm and vice versa. Size of the firm influences the value of the firm in 2008 and 2009 only and negatively which is opposite to what is expected in the study and in the remaining years it is not appeared as significant. There is positive and significant relationship between promoters' holdings and value of the firm in the case of pooled data only which implies that value of the firm enhances with higher promoters' holdings. Promoters' holding is not significant in any year. Model 3 is not significant in explaining the value of the firm in 2004, 2005 and 2006.

V. Conclusion

In this paper, we examine the relationship between dividend policy and seven explanatory variables for S & P CNX Nifty companies in India. The explanatory variables are annual sales growth, market to book ratio, size of the firm, institutional holdings, leverage, market risk and free cash flow. Institutional ownership of stock of a firm and free cash flow are used as proxies for agency cost. Beta value proxies market risk, while annual sales growth and market to book value are used as proxies for investment opportunities available to the firm in the future.

The study is conducted year-wise and for pooled cross sectional data. The year-wise study shows that only in one year ME/BE, INST, SGROWTH and MR of Model-1 influence the dividend policy significantly. ME/BE in Model-2 is significant in three years. FCF in Model-2 is significant in three years. Leverage and size of the firm are not significant in any year as per model-2. The pooled regression results show that there is a significant and positive relationship between dividend policy and sales growth and market to book value ratio. Therefore, we conclude that even though investment opportunities are good, S & P CNX Nifty companies do not commit default in dividend payments. But our conclusion is not consistent with the studies of Higgins (1972), Collins, Saxena and Wansley (1996), Lloyd, Jahera and Page (1985), Rozeff (1982) and Amidu and Abor (2006) who found negative relationship between investment opportunities and dividend payouts. Institutional holdings shows positive and significant relationship at 10% level with dividend policy when it is used in combination with ME/BE, SGROWTH and market risk which means that institutional investors expect

more dividend payments. If the percentage of institutional investors is large, the firm is subject to monitoring by outside suppliers of funds in capital markets and managers are compelled to act in the best interests of the shareholders. Therefore, high dividend payments lead to better monitoring. This finding corroborates with the study of Easterbrook (1984). We find that larger the size of the firm, higher is the payment of dividends because larger firms have easy access to capital markets and enjoy less floatation costs and transaction costs. There is positive and significant impact of free cash flow on dividend payments which is consistent with the findings of Rozeff (1982), Easterbrook (1984), and Collins et al. (1996) who proved that dividend payments reduce the free cash flow available for managers. Leverage is found to have negative relationship with dividend policy, which means that huge amount of long term debt results in huge amount of interest payments and therefore, leads to lesser amount of dividend payments. We find negative relationship of market risk with dividend policy, which means that higher the risk, lesser is dividend payments. This finding supports the findings of Pruitt and Gitman (1991), Rozeff (1982), Lloyd et al. (1985), Collins et al. (1996) and D'Souza and Sexena (1999).

We also examined the impact of dividend policy on the value of the firm, by using three explanatory variables. The explanatory variables used are size of the firm, market risk and promoters' holdings. The year-wise study shows that Tobin'Q, a proxy for the value of the firm as per Model-3 is influenced by the dividend policy, size and market risk significantly in six, two and three years respectively. The study of pooled data set shows that there is a positive and statistically significant relationship between dividend policy and value of the firm. This finding does not support the dividend irrelevance argument of MM (1961) who proved that it is the investment policy and not the dividend which influences the value of the firm. The study indicated that there is a positive and statistically significant relationship between promoter's holdings and value of the firm, which means that higher the promoters' holding, higher is the value of the firm. We find that size of the firm positively influences the value of the firm but it is not statistically supported. There is a negative relationship between market risk and value of the firm but it is not statistically supported.

One note of caution, however, is appropriate at this point. That is, the explanatory power of the models is less in explaining the explained variables. Therefore, the influence of price-earning ratio and book value related variables on dividend policy is to be examined in future research. This study considered only the selected CNX Nifty companies for analysis. We feel that the robustness of these results needs to be tested on a larger sample using different combination of companies.

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Annexure A1

Company Name	Year of Incorporation	Economic Activity
1 A B B Ltd.	1949	Switchgears, nec
2 A C C Ltd.	1936	Cement
3 Ambuja Cements Ltd.	1981	Cement
4 Bharat Heavy Electricals Ltd.	1964	Prime movers
5 Bharat Petroleum Corpn. Ltd.	1952	Petroleum products (Refineries)
6 Bharti Airtel Ltd.	1995	Cellular mobile phone service
7 Cairn India Ltd.	2006	Petroleum oil
8 Cipla Ltd.	1935	Drug formulations
9 D L F Ltd.	1963	Construction of buildings (Residential)
10 G A I L (India) Ltd.	1984	LNG storage & distribution
11 Grasim Industries Ltd.	1947	Cement
12 H C L Technologies Ltd.	1991	Computer software
13 Hero Honda Motors Ltd.	1984	Motorcycles
14 Hindalco Industries Ltd.	1958	Aluminium, unwrought
15 Hindustan Unilever Ltd.	1933	Cosmetics, toilet preparations, soap & washing prep
16 I T C Ltd.	1910	Cigarettes
17 Idea Cellular Ltd.	1996	Cellular mobile phone service
18 Infosys Technologies Ltd.	1981	Computer software
19 Jaiprakash Associates Ltd.	1996	Construction of roads, bridgestunnels etc.
20 Jindal Steel & Power Ltd.	1979	Finished Steel (Non-Alloy Steel)
21 Larsen & Toubro Ltd.	1946	Construction of other industrial plants
22 Mahindra & Mahindra Ltd.	1945	Utility Vehicles incl. jeeps
23 Maruti Suzuki India Ltd.	1981	Passenger cars
24 N T P C Ltd.	1975	Thermal electricity
25 Oil & Natural Gas Corpn. Ltd.	1959	Petroleum oil
26 Power Grid Corpn. Of India Ltd.	1989	Power transmission line services
27 Ranbaxy Laboratories Ltd.	1961	Drug formulations
28 Reliance Communications Ltd.	2004	Cellular mobile phone service
29 Reliance Industries Ltd.	1966	Petroleum products (Refineries)
30 Reliance Infrastructure Ltd.	1929	Thermal electricity
31 Reliance Power Ltd.	1995	Thermal electricity
32 Siemens Ltd.	1957	Switching apparatus
33 Steel Authority Of India Ltd.	1954	Finished Steel (Non-Alloy Steel)
34 Sterlite Industries (India) Ltd.	1975	Copper
35 Sun Pharmaceutical Inds. Ltd.	1993	Drug formulations
36 Suzlon Energy Ltd.	1995	Wind turbines (Wind electricity generator)
37 Tata Consultancy Services Ltd.	1995	Computer software
38 Tata Motors Ltd.	1945	Heavy commercial vehicles
39 Tata Power Co. Ltd.	1919	Thermal electricity
40 Tata Steel Ltd.	1907	Finished Steel (Non-Alloy Steel)
41 Unitech Ltd.	1971	Construction of buildings (Residential)
42 Wipro Ltd.	1945	Computer software