Dividend Decisions : A Study of Selected BSE—Listed Firms in the Indian Corporate Sector

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Abstract : This paper studies the overall as well as industry-wise trend in dividend pattern of Indian firms. It examines the effect of firm's growth, profitability, investment opportunities and indebtedness on dividend payout. It also gives the forecasting of growth pattern of DPS in different sectors. Seventy firms of BSE-100 listed firms during the period 1996-97 to 2006-07 are selected for the study. Further these seventy firms are divided into three broad sectors: manufacturing sector, banking sector and other services sector to have clear picture of industries of BSE listed firms.

Key-words : Dividend; BSE-100 listed firms; Indian Stock Market; indebtedness; profitability; investment opportunities.

1. Introduction

Each operating enterprise is interested in running a profitable business. This might be achieved only by exploiting different factors of complex nature. Dividend among other factors can be regarded as a cause of variation in firm value. Dividend are payments made by a company to its shareholders. Dividend are those cash distribution that companies may pay out regularly to shareholders from earnings, sending a clear and powerful message about future prospects and performance. A company's willingness and ability to pay steady dividend overtime and its power to increase them provide good clues about its fundamentals. Discretely introduced strategy regarding dividend may contribute significantly to the firm value. Dividend is one of the most important financial policies not only from the viewpoint of the company, but also from that of the stakeholders. Like for investors, dividends whether declared today or accumulated and provided at a later date-are not only a means of regular income, but also an important input in valuation of a firm. Lenders may also have interest in the amount of dividend a firm declares, as more the dividend paid less would be the amount available for servicing and redemption of their claims. Similarly, managers' flexibility to invest in projects is also dependant on the amount of dividend that they can offer to shareholders as more dividends may mean lesser funds available for investment. In the process of running business, managers have always kept in

mind that the dividend decisions impact their firm's shares. Share price is critical determinant of shareholders wealth. So, manager's dividend decisions affect common share price and therefore, the wealth of shareholders.

Before corporation were required by law to disclose financial information in 1930's, a company's ability to pay dividend was one of the signs to its financial health. Despite the Securities and Exchange Act of 1934 and the increased transparency it brought to the industry, dividends still remain a worthwhile yardstick of a company's prospect. Dividends are referred as reward for providing finances to a firm as without any dividend payout, shares would not have any value. For a company, it is a pivotal policy around which other financial policies rotate. All the corporate finance is built on three principles, which we title, as the investment principle, the financing principle and the dividend policy. The investment principle determines where businesses invest their resources, the financing principle governs the mix of funding used to fund these investment and the dividend principle answers the question of how much earnings should be reinvested back into the business and how much returned to the owners of the business. Company inter-alias the three decisions pertaining to investment, financing and dividends simultaneously as these three decisions are interrelated. Dividend policy decision influences the financing decision of the firm through retained earnings. Financing decision would relate to the amount of funds to be raised from external sources as the investment needs of a firm can be fulfilled by a combination of retained earnings and external financing. Therefore, higher the amount of retained earnings, given the investment needs, lower will be the need for external finance and vice-versa. Value of the corporate securities depends to a great extent on dividend and, therefore, in deciding upon the financial structure of a company dividend has to be assigned due weightage.

So, a thorough exploratory study on dividend and value of the firm is beneficial to the company, shareholders, government and the economy as a whole, since the business is expanding by leaps and bounds. Thus present study is undertaken to analyze the trend of dividend in context of Indian firms, relation of dividend with other important variables of the firm.

2. Literature review

Linter (1956) observed that dividend policy is important to managers and that the market reacts positively to dividend increase announcements and negatively to decreases. Gorden (1959) in his seminal work proposed that even in presence of perfect capital market, the existence of uncertainty about the future cash flow, suffice to make the price of shares depended upon the dividend policy. Fama and Babiak (1968) explored that the firms, a prior, set their target dividend level and try to stick to it. Fama (1974) provided empirical relationship between the dividend and investment decision of the firms. Black and Scholes (1974) tested the effect of dividend yield on the stock returns, after dividend announcement. Black (1976) tried to answer the dividend puzzle. Miller and Scholes (1982) re-examined whether shareholders with high dividend yield receive higher risk adjusted rate of return. Miller and Rock (1985) extended

the standard finance model of the firms dividend by allowing the firms manager 'insider' to know more about the firm's financial health than 'outside' investors. They explored that a consistent signaling equilibrium exists under asymmetric information. Jensen (1986) studied that in presence of free cash flows, the firms pay dividends or retire their debts to reduce the agency cost of free cash flow. Healy and Palepu (1988) investigated whether dividend policy changes convey information about the future earnings substantiated by cash. They found that investors interpret announcements of dividend initiations and omissions as manager's forecast of future earnings changes. Lang and Litzenberger (1989) explored the cash flow signaling and free cash flow explanation of the impact of dividend announcements on stock prices. Brennan and Thakor (1990) developed a theory of choice for distribution of cash from firm to shareholders. They showed that a majority of a firm's shareholders may support a dividend payment for small distribution, despite the preferential tax treatment of capital gains for individual investors. For larger distributions as open market stock re-purchase, and for the largest distributions tender offer re-purchases is likely to be preferred by a majority of shareholders. Jensen et al. (1992) investigated the determinant of cross-sectional differences in insider ownership, debt and dividend policy. The authors found that firms with higher insider ownership chooses lower level of debt and dividends. Kevin (1992) concluded in his study that dividend stability is primary determinant of payout while profitability is only of secondary importance. Mishra and Narender (1996) found support for the Linter's model. Han et al. (1999) tested the agency cost based hypothesis, which predicts dividend payout to be inversely related to the degree of institutional ownership and the tax based hypothesis, predicting the dividends to be positively related with institutional ownership. They provided support for the tax-based hypothesis, suggesting a 'dividend clientele' for the institution's preference for higher dividends. Narasimham and Vijayalakshmi (2002) analyzed the influence of ownership structure on dividend payout. Gugler and Yurtoglu (2003) found large shareholding of the largest owner reduces the dividends payout ratio, while shareholding by the second larger owner increases it. Manos (2003) found government ownership, insider ownership, debt, risk and growth opportunities have a negative impact on dividend payout ratio, whereas institutional ownership, foreign ownership and dispersed ownership have a positive impact on the payout ratio. Omet (2004) showed that firms follow stable dividend policies. Furthermore the results gave the indication that the tax imposition on dividend did not have the significant impact on the dividend behaviour of the listed firms. Eriotis (2005) found that firms have a general dividend policy to distribute, each year dividend according to their target payout ratio, which is distributed earnings and size of the firm. Amidu and Abor (2006), conducted the study on determinants of dividend policy. The final conclusion of article is that dividend payout policy decision of firms are influenced by profitability, cash flow position, and growth scenario and investment opportunities of the firms. Baker et al. (2007) concluded that the most important factor for determinants of dividend is level of expected future earnings, stable earnings, pattern of past dividends and the level of current earnings.

3. Objective and Methodology

This study emphasize on one of the principle of corporate finance–dividend principle. Although dividend is not a new area of research, it is still attracting the attention of many researchers, it remains one of the most interesting and puzzling topics in modern corporate finance. The topic of dividend remains one of the most controversial issues in corporate finance. For more than half a century financial economists are engaged in modelling and examining corporate payout policy. Long ago Black (1976) stated that, "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that don't fit together". Since then a vast amount of literature has been produced examining dividend. Recently, however, Frankfurter and Wood (2002) concluded same as Black (1976) that: The dividend "puzzle," both as a share value enhancing feature and as a matter of policy, is one of the most challenging topics of modern finance or financial economics. Also Allen et al. (2000) summarized the current consensus view when they concluded "Although a number of theories have been put forward in the literature to explain their pervasive presence, dividends remain one of the thorniest puzzles in corporate finance".

Different authors have used different combinations of variables for explaining the dividend behaviour. Besides, there are different approaches to the decision involving distribution versus retention of net profit after taxes. The present study aims at identifying the factors or variables influencing corporate dividend policy significantly with reference to BSE listed firms. Therefore, more specifically the objectives of this study are as follows:—

- To study the trends in the dividend pattern of Indian firms.
- To analyze industry-wise dividend payment pattern.
- To analyze the influence of firm characteristics such as profitability, growth, indebtedness and investment opportunity on the dividend.

The study is exploratory, casual and empirical in nature. It is based on information available from the BSE-100 firms' data during the period 1996-97 to 2006-07. For our study the data primarily obtained from the corporate database (PROWESS) maintained by CMIE, the Center for Monitoring the Indian Economy. We restrict our analysis to firms which have no missing data which may be difficult to account for. Thus our study consists of data of 70 firms constituting BSE-100. For further analysis total observed firms are segregated into different sectors. Three broad sectors viz. Manufacturing sector, Banking sector and Other Services sector constitutes 46, 09 and 15 firms respectively. We confine our analysis to BSE listed firms only because all the listed firms are required to follow the norms set by SEBI for announcing the financial accounts. It is also observed that BSE listed firms dominate Indian Stock Market and they represent different industrial sectors. To analyse the data different statistical techniques (viz. descriptive statistics, multiple regression analysis, trend analysis, forecasting etc.) and some financial techniques (ratio analysis) are used. The analysis of data is done through SPSS package.

4. Determinants of Dividend Payout

Firm's specific attributes that affect dividend payout are mentioned below:

Indebtedness

The financial structure of a firm consists of both debt and equity financing. When a firm acquires debt financing it commits itself to fixed financial charges embodied in interest payments and the principal amount, and failure to meet these obligations may lead the firm into liquidation. The risk associated with high degrees of financial leverage may therefore result in low dividend payments because, firms need to maintain their internal cash flow to pay their obligations rather than distributing the cash to shareholders. In addition, some debt covenants have restrictions on dividend payments, because creditors want to secure their debt and avoid being expropriated by shareholders. Furthermore, as argued by Jensen (1986), debt can serve as a substitute device for dividends in reducing the agency costs of free cash flow. That is, when a firm obtains debt, it makes a fixed commitment to creditors, which reduces the discretionary funds available to managers and subjects them to the scrutiny of debt-suppliers. This suggests that, highly levered firms are expected to have low dividend payouts. To examine the extent to which indebtness (INDEBT) can influence dividend payouts, the study used ratio of total borrowings to total assets.

Firm Growth and Investment Opportunities

The relationship between investment and dividend policies can be seen from two perspectives. Firstly, by paying dividends a firm is forgoing a relatively cheap source of financing, i.e. retained earnings, as compared to debt and new equity issues. Secondly, dividend payments reduce the firm's available funds for investment activities. In other words, dividends and investments are competing for limited and low-cost internal funds This suggests that in imperfect capital markets there may be a link between dividends and investments. Intuitively, firms with high growth and investment opportunities will need the internally generated funds to finance those investments, and thus tend to pay little or no dividends. In contrast, firms with slow growth and fewer investment opportunities are likely to pay more dividends. Note that this prediction is consistent with the free cash flow hypothesis. The proxies for growth (FGR) and investment opportunities (INVOPP) are growth of total assets and RD investment to total assets.

Profitability

The decision to pay dividends starts with profits. Therefore, it is logical to consider profitability as a threshold factor, and the level of profitability as one of the most important factors that may influence firms' dividend decisions. The theory suggests that dividends are usually paid out of the annual profits, which represents the ability of the firm to pay dividends. Thus, firms incurring losses are unlikely to pay dividends. This statement might be demonstrated by the following quote "An annual loss is essentially a necessary condition for dividend reductions in NYSE firms with established earnings and dividend record" (DeAngelo et.al 1992). Aivazian et al. (2003) in their study of the dividend policy of emerging market firms and US firms demonstrated that profitability has a significant impact on dividend payouts for both samples. Recall that the pecking order hypothesis suggests that firms finance investments first with the internal finance,

and if external financing is necessary, firms prefer to issue debt before issuing equity to reduce the costs of information asymmetry and other transactions costs (Myers 1984, and Myers and Majluf, 1984). This financing hierarchy thesis might also have an effect on the dividend decision. That is, taking into account the costs of issuing debt and equity financing, less profitable firms will not find it optimal to pay dividends, ceteris paribus. On the other hand, highly profitable firms are more able to pay dividends and to generate internal funds (retained earnings) to finance investments. Therefore, the pecking order hypothesis may provide an explanation for the relationship between profitability and dividends. To test this hypothesis, profits before interest and tax divided by total assets is used as a measure of a firm's profitability (PROFIT).

5. Variables and Models

For attaining the objectives of the study the following eight variables are identified from extensive literature review.

i) Dividend per share (DPS) for the firm j in year t is calculated as

$$DPS_{j,t} = \frac{\text{Amount of dividend paid by firm j in year t}}{\text{Paid - up equity capital for firm j in year t}}$$

ii) Dividend payout ratio (DPR) for the firm j in year t is computed as

$$DPR_{j,t} = \frac{\text{Dividend per share for firm j in year t}}{\text{Earning per share for firm j in year t}}$$

iii) Average Dividend (ADIV) in year t is computed as

$$ADIV_t = \frac{\text{Total dividend paid by the firms in year t}}{\text{Total number of firms in year t}}$$

iv) Average Profit After Tax (APAT) in year t is computed as

$$APAT_t = \frac{\text{Total profit after tax of the firms in year t}}{\text{Total number of firms in year t}}$$

v) Firm Growth Rate(FGR) for firm j in year t is computed as

$$FGR_{j,t} = \frac{TA_{j,t} - TA_{j,t-1}}{TA_{j,t-1}},$$

where

$TA_{j,t}$ = Total assets of firm j in year t

vi) Investment opportunities (INVOPP) for the firm j in year t is computed as

$$\text{INVOPP}_{j,t} = \frac{\text{Total investment in research and development of firm j in year t}}{\text{Total assets of firm j in year t}}$$

vii)Profitability (PROFIT) for firm j in year t is computed as

$$\text{PROFIT}_{j,t} = \frac{\text{Profits before interest and tax of firm j in year t}}{\text{Total assets of firm j in year t}}$$

viii) Indebtness(INDEBT) for firm j in year t is computed as

$$\text{INDEBT}_{j,t} = \frac{\text{Total borrowings of firm j in year t}}{\text{Total assets of firm j in year t}}$$

The eight explanatory variables defined above of seventy firms constituting the BSE-100 firms drawn from Prowess database are analyzed. The muliple regression analysis of data is done through SPSS package. Graphs, descriptive statistics, Correlation,analysis of variances and forcasting techniques are used for analysis of data. To analyse the trends in dividend payment pattern of BSE listed companies DPS, ADIV, APAT are computed for the period 1996-97 to 2006-07.Graphs are used for analyzing trend of overall DPS as well as industry-wise. Correlation matrix is computed to establish a meaningful relationship between the various explanatory variables. Multiple regression model has been used to test the theoretical relation between the dividend payout and different characteristics of the firm which is as follows :

$$DPR = b_0 + b_1 (FGR) + b_2 (INVOPP) + b_3 (PROFIT) + b_4 (INDEBT),$$

where

b_0 = constant term or intercept of the model

b_i = i-th partial regression coefficient, i = 1,2,3,4

Backward Stepwise Regression is further applied on the same set of four independent variables to identify most important explanatory variables.

6. Data Anaylsis and Findings

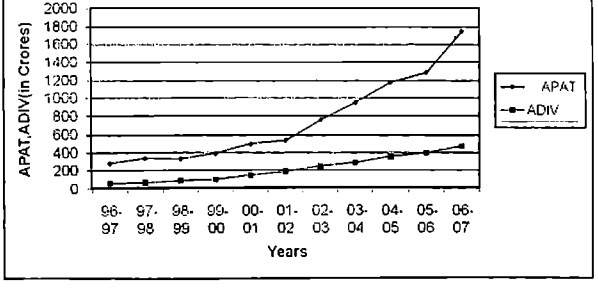
6.1 Trends in Dividends

In this section we will study overall trend of dividend as well as industry-wise. In the first step, for analyzing the overall trend in dividends DPS, APAT, ADIV of seventy firms from BSE-100 firms during 1996-97 to 2006-07 are studied in Table 1. Line graphs are used to get a clear picture of dividend trend in Indian context. The ADIV have steadily increased from Rs. 58.088 crore in 1996-97 to Rs. 469.811 crore in 2006-07 (Table 1). Dividend payments have exhibited an increasing smooth trend in the Indian context (Figure 1). Further compared to APAT, it is observed that average dividend payments has increased 28.44% in 2006-07 from 1996-97 where average profit after tax has increased only 24.93% in last ten years.

Table 1 : Trend in Dividends, APAT, DPS during 1996-1997 to 2006-2007

Year	APAT (Rs Crore)	ADIV (Rs Crore)	DPS (Rs)
1996-97	280.6144	58.0884	0.3684
1997-98	337.4463	66.7690	0.3802
1998-99	330.2707	86.7690	0.4371
1999-00	389.4411	98.9399	0.4719
2000-01	493.71	144.4767	0.5974
2001-02	532.0613	188.6651	0.8716
2002-03	759.0979	243.7233	0.9468
2003-04	954.4377	288.6226	1.7015
2004-05	1178.747	352.9657	1.3878
2005-06	1287.391	397.5551	1.5610
2006-07	1744.411	469.8110	1.5100

Figure 1:Trend in ADIV and APAT during 1996-97 to 2006-2007



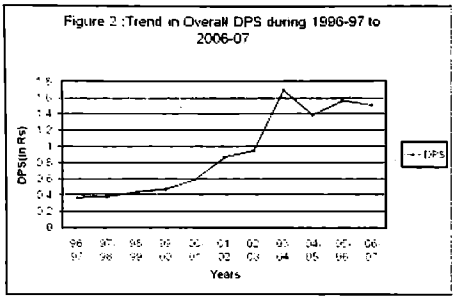


Figure 2 shows the trend of overall DPS during 1996-97 to 2006-07. Overall DPS has shown a growth before reaching the peak in 2003-04 after that a sharpfall in DPS in 2004-05 is observed. It regained in the year 2005-06. However, this does not reveal a clear trend in DPS industry-wise in the market. So, seventy firms are divided into three sectors : Manufacturing sector constitutes 46 firms, Banking sector constitutes 09 firms, Other Services sector constitutes 15 firms. Table 2 provides dividend per share (DPS) of different sectors during the period 1996-97 to 2006-07. Trends in each industry group are depicted in Figure 3 and Table 2. Industry-wise DPS shows that firms in the other services sector paid more DPS compared to other sectors though its DPS fluctuates. Manufacturing firms showed consistently growth in DPS which is followed by banking sector firms.

Table 2 : Trend of DPS in different sectors from 1996-97 to 2006-07

Year	Manufacturing Sector	Banking sector	Other Services sector
1996-97	0.4163	0.1347	0.3571
1997-98	0.4143	0.1715	0.4007
1998-99	0.4883	0.1651	0.4435
1999-00	0.5061	0.1922	0.5349
2000-01	0.5720	0.2299	0.8959
2001-02	0.8210	0.2735	1.3854
2002-03	1.0563	0.4110	0.9325
2003-04	1.2481	0.5096	3.8068
2004-05	1.3924	0.5026	1.9047
2005-06	1.5072	0.5423	2.3369
2006-07	1.6714	0.5968	1.5628

6.2 Descriptive Statistics of DPS in Different Sectors

Table 3, Table 4 and Table 5 show different descriptive statistics of DPS different sectors during 1996-97 to 2006-07. Service sector firms DPS are volatile as they have higher levelofdeviation during the study period. Where as Banking sector firms are more stable than Manufacturing sector firms as coefficient of variation is lower than latter. Service sector large dispersion projects how much the return on funds is deviating from the expected normal return. Thus investor willing to avoid risk would prefer to invest in Banking sector. In addition, it is found that all the sectors have positive skewness indicating a distribution with asymmetric tail extending towards more positive values. For investors, positive skewness would mean frequent small negative outcome may be there but extreme bad scenario are not as likely. So it is observed that BSE-100 listed firms are safer to invest for regular return as greater chance of negative outcome is not expected. When analysing historical results kurtosis test the level of risk. If past data results in platykurtic distribution, as in Banking sector, investor will expect more volatility in future return. If past data yields a leptokurtic, as in Manufacturing sector, will expect relatively low amount of variation because return values are usually close to the mean. So, investors who wish to avoid large, erratic swing in DPS may wish to structure their investment to produce a leptokurtic distribution i.e in Manufacturing sector.

Figure 3 : Trend of DPS in Different Sectors during 1996-97 to 2006-07

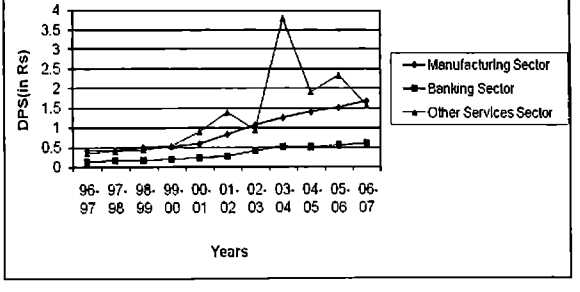


Table-3 : Descriptive Statistics of DPS in Manufacturing Sector from 1996-97 to 2006-07

Year	Minimum	Maximum	Mean	S.D.	Skewness	Kurtosis	C.V.
1996-97	0.0000	1.7074	0.4163	0.2864	2.0159	8.1119	68.7965
1997-98	0.0000	1.7000	0.4143	0.3041	1.7913	6.1991	73.4009
1998-99	0.0000	2.1108	0.4883	0.4023	1.7876	4.8877	82.3879
1999-00	0.0000	2.9000	0.5061	0.4814	2.8276	12.8003	95.1195
2000-01	0.0000	3.5000	0.5720	0.5787	3.0860	13.9687	101.1713
2001-02	0.0000	8.5000	0.8210	1.3944	4.4628	22.2266	169.8417
2002-03	0.0000	8.9995	1.0563	1.5510	3.6859	16.1438	146.8333
2003-04	0.0000	9.9995	1.2481	1.7420	3.8450	16.6414	139.5721
2004-05	0.0000	9.9995	1.3924	1.6343	3.6773	17.2105	117.3729
2005-06	0.0000	9.9995	1.5072	1.6954	3.2276	13.7188	112.4867
2006-07	0.0964	8.4995	1.6714	1.5131	2.6552	9.4144	90.5289

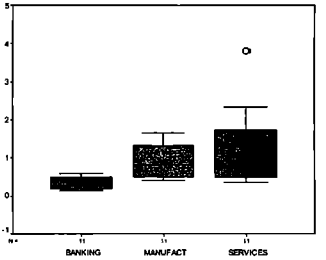
Table-4 : Descriptive Statistics of DPS in Banking sector from 1996-97 to 2006-07

Year	Minimum	Maximum	Mean	S.D.	Skewness	Kurtosis	C.V.
1996-97	0.0000	0.3790	0.1429	0.1115	1.1357	1.8066	78.0266
1997-98	0.0000	0.4000	0.1715	0.1179	0.7306	0.7299	68.7464
1998-99	0.0948	0.4000	0.1651	0.1087	1.7940	2.0794	65.8389
1999-00	0.0599	0.5000	0.1922	0.1507	1.6135	1.3146	78.4079
2000-01	0.0920	0.5000	0.2299	0.1320	1.4726	1.2969	57.4163
2001-02	0.0719	0.6000	0.2735	0.1676	0.8909	0.2785	61.2797
2002-03	0.2073	0.8500	0.4110	0.2545	0.9596	-0.8612	61.9221
2003-04	0.2400	1.1000	0.5096	0.3122	1.1424	-0.2049	61.2637
2004-05	0.1250	1.2500	0.5026	0.3507	1.4013	1.7325	69.7772
2005-06	0.0629	1.4000	0.5423	0.3867	1.4625	2.7155	71.3074
2006-07	0.0701	1.4000	0.5968	0.4103	0.8537	0.5717	68.7500

Table-5 : Descriptive Statistics of DPS in Service Sector during 1996-97 to 2006-07

Year	Minimum	Maximum	Mean	S.D.	Skewness	Kurtosis	C.V.
1996-97	0.1500	0.8500	0.3571	0.2025	1.1262	0.8168	56.7068
1997-98	0.1499	0.8500	0.4007	0.2111	0.9793	0.0133	52.6828
1998-99	0.1525	0.8501	0.4435	0.2362	0.8334	-0.7355	53.2582
1999-00	0.1501	1.9001	0.5349	0.4502	2.2136	5.7725	84.1653
2000-01	0.2002	5.0000	0.8959	1.2333	3.0204	9.8255	137.6605
2001-02	0.2002	8.7500	1.3854	2.2823	2.8303	8.3830	164.7394
2002-03	0.2002	5.3989	0.9325	1.2831	3.4212	12.4092	137.5979
2003-04	0.2888	25.8842	3.8068	7.2512	2.5252	6.2544	190.4802
2004-05	0.2987	13.7494	1.9047	3.3751	3.5079	12.9321	177.1985
2005-06	0.0410	11.1401	2.3369	3.2956	2.1237	3.7277	141.0244
2006-07	0.2500	6.5995	1.5628	1.6263	2.3285	6.5913	104.0632

Figure 4 : Box Plot of DPS for Different Sectors



From the above figure maximum variation in DPS is observed in Service sector. Whereas it is observed that Banking sector firms are most stable sector as volatility in DPS is least compared to others sectors. Thus investors who want regular income from their investment would first prefer Banking sector firms as these firms are safer to invest than in Manufacturing sector firms and Service sector firms.

6.3 Factors Influencing Dividend Decisions

In this section the dependence of study variables INVOPP, PROFIT, FGR, INDEBT, DPR on dividend payout of the firm, are estimated through multiple regression analysis. Table 7 shows the data on different variables during 1996-97 to 2006-07.

Table-7 : Variables' Values from 1996-97 to 2006-07

YEAR	INVOPP	PROFIT	FGR	INDEBT	DPR
1996-97	0.0065	0.1465	0.2200	0.3206	0.0239
1997-98	0.0057	0.1385	0.2833	0.2944	0.0229
1998-99	0.0060	0.1330	0.1858	0.2864	0.0250
1999-00	0.0053	0.1274	0.3354	0.2621	0.0259
2000-01	0.0067	0.1378	0.1815	0.2608	0.0411
2001-02	0.0058	0.1313	0.2098	0.2552	0.0548
2002-03	0.0074	0.1386	0.1163	0.2309	0.0546
2003-04	0.0082	0.1504	0.1889	0.2158	0.0663
2004-05	0.0083	0.1534	0.2497	0.2162	0.0659
2005-06	0.0081	0.1545	0.2494	0.2100	0.0869
2006-07	0.0071	0.1727	0.3195	0.2157	0.0837

The SPSS output are given below

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.960(a)	.922	.870	.00865821351337

a Predictors: (Constant), INVOPP, FGR, INDEBT, PROFIT

ANOVA(b)

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	.005	4	.001	17.706	.002(a)
	Residual	.000	6	.000		
	Total	.006	10			

a. Predictors : (Constant), INVOPP, FGR, INDEBT, PROFIT

b. Dependent Variable: DPR

Coefficients(a)

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	Constant	.088	.061		1.458	.195
	FGR	-.053	.062	-.144	-.864	.421
	INDEBT	-.498	.118	-.776	-4.219	.006
	PROFIT	.862	.371	.471	2.324	.059
	INVOPP	-3.652	6.016	-.163	-.607	.566

a Dependent Variable: DPR

Hence the regression equation is

DPR = 0.088 - 0.053(FGR) - 3.652(INVOPP) + 0.862(PROFIT) - 0.498(INDEBT)

From the value of R square (0.922),it is clear that the model is well fitted (F = 17.706, p-value = 0.002) with confidence level of 99.8%. Since the sample size is moderate over here Adjusted R square will be more appropriate. Adjusted R square depicts that 87% of the variation in dividend payout is explained by FGR, INVOPP, PROFIT, INDEBT. From the above regression equation, it can be inferred that if profitability increased by 1unit, dividend payout is estimated to increase by 0.862 unit, assuming all other variables to be constant. Profitability have positive coefficient in the regression, which indicates its direct relationship with dividend payout. The negative coefficient of firm growth, investment opportunities, and indebtness indicates that the higher firm growth, investment opportunities, and indebtness will have negative impact on dividend payout.

As another alternative Backward Stepwise Regression on the same set of four independent variables is applied. The procedures starts with all four variables in the model and gradually eliminates those, one after another, which do not explain much of the variation in dividend payout until it ends with an optimal mix of independent variables according to pre-set criteria for the exist of variables. This results in the model with only two independent variables-indebtness, profitability remaining in the model. The step wise regression equations are shown below

DPR = 0.088 – 0.053(FGR) – 3.652(INVOPP) + 0.862(PROFIT) – 0.498(INDEBT)

DPR = 0.069 – 0.027(FGR) + 0.702(PROFIT) – 0.45(INDEBT)

DPR = 0.072 + 0.652 (PROFIT) – 0.459(INDEBT)

The R square value of the model has dropped down 91.2% with a confidence level of 100%. Implies that alone indebtness, profitability can explain 91.2% of variation in dividend payout.

6.4. Forcasting of DPS in Different Sector

Table-8 : Prediction of DPS in different sectors

Year	Other Services	Other Services (pred)	Banking Services	Banking Services (pred)	Manufacturing Sector	Manufacturing Sector (pred)
1996-97	0.3571	0.4174	0.1347	0.1578	0.4163	0.4791
1997-98	0.4007	0.5259	0.1715	0.1809	0.4143	0.4791
1998-99	0.4435	0.6214	0.1651	0.2177	0.4883	0.4123
1999-00	0.5349	0.7064	0.1922	0.2113	0.5061	0.5623
2000-01	0.8959	0.7927	0.2299	0.2384	0.5720	0.5239
2001-02	1.3854	0.9339	0.2735	0.2761	0.8210	0.6379
2002-03	0.9325	1.1448	0.4110	0.3197	1.0563	1.0700
2003-04	3.8068	1.2229	0.5096	0.4572	1.2481	1.2916
2004-05	1.9047	1.8602	0.5026	0.5558	1.3924	1.4399
2005-06	2.3369	1.9897	0.5423	0.5488	1.5072	1.5367
2006-07	1.5628	2.1797	0.5968	0.5885	1.6714	1.6220
2007-08		2.1769		0.6430		1.8356
2008-09		2.2975		0.6892		1.9998
2010-11		2.4180		0.7354		2.1640
2011-12		2.5386		0.7816		2.3282
2012-13		2.6592		0.8279		2.4924

Table 8 depicts forecasting of growth pattern of DPS in different sectors. For the forecasting DPS the Holt's (1957) linear exponential smoothing model is used. It is observed from above

table that it is difficult for investor to predict DPS in other service sector firms. Whereas in case of banking sector firms and manufacturing sector firms DPS prediction is possible for investor.

7. Remark

The present study examines the dividend behaviour of selected BSE-100 firms over the period 1996-97 to 2006-07. Trends indicate that the firms paid dividend during the study period has shown an upward trend. Thus confidence of small investors increased in the market during the study period. It should not come as a surprise that earnings and dividends are positively correlated over time, because dividends are paid out of earnings. Dividend changes follow earnings changes over time. Analysis of industry-wise dividend per share shows that firms in the other services sector paid more dividend per share compared to other sectors though its fluctuates. Manufacturing firms showed consistently growth in dividend per share, which is followed by banking sector firms.

This paper develops a regression model to explain dividend payout ratios of firms. Several variables employed the literature are utilized as possible determinants of dividend payout. The main conclusion of the paper is that a firm's dividend payout will depend upon its indebtness, growth, investment opportunities, profitability. Moreover, the relationship is inverse in all cases except profitability. Based on the empirical findings it can be concluded that firstly the risk associated with high borrowing result in low dividend payments because firms need to maintain their internal cash flow to pay their obligations rather than distributing the cash to shareholders. Agrawal and Jayaraman (1994) found that payout ratios for all-equity firms are significantly larger than levered firms. Secondly, this suggests that firms with high growth and investment opportunities will need the internally generated funds to finance those investments, and thus tend to pay little or no dividends. In contrast, firms with slow growth and fewer investment opportunities are likely to pay more dividends. Researchers such as Rozeff (1982), Jensen et al. (1992), Alli et al., (1993), Gaver and Gaver (1993), Deshmukh (2003), Ho et al. (2004), and many others, have found a significant negative relationship between dividends and firms' investment opportunities. Thirdly, dividends are usually paid out of the annual profits, which represents the ability of the firm to pay dividends. Thus, firms incurring losses are unlikely to pay dividends. On the other hand, highly profitable firms are more able to pay dividends and to generate internal funds (retained earnings) to finance investments.The analysis has produced some interesting results and one avenue for future research is to extend the investigation to large number of firms for a longer period.

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