

## An analytical study on determinants of dividend policy with special reference to selected BSE sensex companies

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### Abstract

The purpose of the paper is to examine the financial factors determining dividend policy of companies selected under the study. Dividend policy is represented by individually or collectively of dividend per share, dividend yield and dividend payout ratio. The present study's dividend policy is represented by dividend payout ratio only. Sample companies of the study are listed on BSE in India and the same sample companies are also the part of the constituent companies of BSE sensex. The study has used the data such as DPR, EBIT, total assets, total debt, shareholders equity, retaining earnings, current assets, current liabilities, and profit after tax of 15 companies for the period from 2007/08 to 2016/17 to obtain various ratios such as dividend payout ratio, profitability ratio, growth of the firm ratio, debt-equity ratio, investment opportunity ratio, liquidity ratio and firm size ratio. These ratios of all selected companies are put in the form of pooled data and are analyzed with the help of pooled OLS model. The results of the study are that except profitability ratio, all other ratios used as independent variables in study are not statistically significant. Hence, profitability ratio is the only ratio among the selected ratios is the determinant of dividend policy of companies selected under study.

**Keywords:** Dividend policy, BSE sensex companies, Determinants of dividend policy, Correlation and multiple regression.

### Introduction

Dividend policy remains a topic of discussion and research due to its intricacies with the performance of firm. Abundant research work has been carried out to study and understand its relationship with firm, influence and impact on firm and etc. Dividend policy is referred to as payout of portion of profit, share of the profit of company received by shareholders, it is simply concerned with determining the portion of firm's earning into dividend and retained earnings in the firm, the set of guidelines a company uses to decide how much of its earnings it will payout to shareholders, etc. Dividend policy is being influenced by many factors. Some affect the amount of dividend and some affect types of dividend. Major factors are legal requirements, firm's liquidity position, expected rate of return, repayment of loan, access to capital market, desire of control and others. All these factors are general but not particular as priorities and natures of firms are different from industry to industry. Due to this, lot of research work has been done to see the determinants of dividend policy of firms. Likewise, BSE is been acronym for Bombay Stock Exchange, oldest and biggest stock exchange in India representing all most all the sectors of Indian economy. BSE has got major index S&P BSE Sensex along with many industry-wise indices. BSE sensex is assumed to be the barometer of Indian economy; it is constituted by 30 top and financially sound companies. As the constituents of BSE Sensex are top and financially sound, the dividend policy is/are being very important to these companies from the growth and development point of view as dividend includes distribution of available profit to shareholders in the form of cash resulting reduction in the available funds to be used for financing new projects and the growth of business after the payment of dividend is needed to be handled without burdening on the existing shareholders. Hence, it is essential to study and understand

the financial factors, which are likely to affect the dividend policy (Dividend payout ratio) of BSE sensex companies.

### Review of Literature

After the publication of Lintner's (1956) analysis of determinants of dividend policy and dynamics, several studies were carried out on the same subject. The same work is further researched by Fama and Blahnik (1968). Along with these research works, plenty of research works consisting of both theoretical and empirical being carried out by researchers during last 5 decades. Results of the studies reveal that factors considered as determinants of dividend policy are not same in all industries and vary due to changes in various factors.

Rehab Khan and et al. (2017) have conducted a study to examine the determinants of dividend payout ratios of KSE listed companies in Pakistan. Data from 2003 to 2012 of ten companies of cement industry were used and panel regression model was employed. Factors such as profitability, tax, and cash flow have a significant relation with dividend payout ratio and debts to equity and sales growth have insignificant relationship with dividend payout ratio.

Turki SF Alzomaia and other (2013) conducted a study entitled 'Determination of Dividend Policy: The Evidence from Saudi Arabia' by running regression to the panel data of companies for the period from 2004 to 2010. EPS, DPS for last year, Growth, Debt to equity ratio, beta and capital size were used as independent variable and dividend per share was used as dependent variable. Findings of the study revealed that companies rely on current earnings per share and past dividend per share to set dividend policy.

Ganesh S and Suresh M (2018) through a study analyzed the pattern of dividend payout ratio of companies listed on NSE India by taking a sample of 30 companies

from each category of large cap, mid cap and small cap during 2014-15 and 2015-16. Financial parameters like corporate tax, profitability, sales growth, debt to equity ratio and cash flow position-were used to see their relationship with standard and adjusted dividends payout ratio and the study identified that the dividend payout was the function of profit margin, sales growth and tax for all the three capitalization sectors.

Basil Al-Najjar and Erhan Kilincarslan (2018) through a study 'Revisiting Firm-Specific Determinants of Dividend Policy: Evidence from Turkey' investigated the effects of firm specific factors on the dividend policies of companies. A panel data set of 264 firms traded on the Istanbul stock exchange over the period 2003-2012 is used. Results of the study revealed that profitability, growth, firm age, debt, and firm size are the most important firm specific characteristics determining cash dividend payment decisions of ISE listed firms.

Talat Afza and Hammad Hassan Mirza (2010) investigated the firm specific characteristics on corporate dividend behavior in emerging economy of Pakistan. Data from 2005 to 2007 of 100 companies listed at Karachi Stock Exchange has been analyzed by using OLS regression. Results of the study revealed that managerial individual ownership, cash flow sensitivity, size and leverage are negatively related, and operating cash flow and profitability are positively related. Hence, managerial ownership, individual ownership, operating cash flow, and size are the most significant determinants of dividend behavior.

Hafeez Ahmed and Attiya Javid (2009) have examined the dynamics and determinants of dividend payout of 320 non-financial firms listed in the Karachi stock exchange during the period of 2001 to 2006. Dynamic panel regression has been performed and found that profitable firms with more stable income can afford larger cash flow and therefore pay larger dividend. In addition, the ownership concentration and market liquidity have the positive impact on dividend payout policy.

Matthias Nnadi and Nyema Wogboroma (2012) demonstrated through a study 'Determinants of dividend policy: evidence from listed firms in the African stock exchanges' that there are similarity among studies of dividend determinants in Africa and particularly, agency cost found to be the most dominant determinant dividend policy among African firms.

Nilesh Movalia and Pintu Vekariya (2014) studied the determinants of dividend policy and their effect on dividend policy of BSE sensx companies, and found Profitability, leverage, growth rate and rate of return are as determinants of dividend policy.

Yusniliyana Yusof and Suhaiza Ismail (2014) investigated the factors such as earnings, cash flows, free cash flows, debt level, growth, investment, size, largest shareholders, risk and lagged dividend with the pooled OLS model, fixed effect model and random effects model, and found that earnings, debt, size, investment and largest shareholders have a significant influence on dividend policy

determinants of dividend policy of public listed company in Malaysia.

Nurul Shahnaz and et al. (2016) examined the determinants of dividend policy of listed firms in Malaysia by applying panel regression model to the data for the period 2005 to 2009 which is panel in nature. Study found the determinants and very determinants are cross examined across eight different industries to see the possible divergences in the determinants of dividend policy in emerging market.

Souvik Banerjee (2016) conducted a study on 40 banks including public sector and private sector banks to make comparative study of dividend policy. The study has made use of the data for the period of five years from 2011 to 2015 and applied non parametric Kruskalwallis test is used. Study found that there is no significant difference in dividend payout ratio of public and private sector banks.

Farman Ali Khan and Nawaz Ahmad (2017) has tried to find out the impact of profitability, growth opportunity, risk, liquidity, firm size, leverage, taxation, and audit type on dividend payout to increase understanding of the determinants of dividend payout in Pakistan environment. Study has used listed pharmaceutical companies' financial data for the period of five years from 2009 to 2014. Data analyzed by using correlation & backward multiple linear regressions and findings of the study are audit type, liquidity, growth opportunity and profitability are key determinants whereas other variables used in the study are not statistically significant.

Yusuf Olatunji Oyedeko (2017) examined the factors which have bearing capacity on dividend policy of Nigerian Deposit Banks. Study with the sample size of 15 deposit money banks listed at the Nigerian stock exchange was used. Statistical tools such as Co relational research design and panel regression methods were employed. Findings of the study are board independence, board size, earnings per share and non-executive director do not significantly affect DPS in pre-crisis, crisis and post crisis period.

Ebenezer Agyemang Badu (2013) examined factors/variables like RoA, growth of firm in net income, firm age, ratio of cash and cash equivalent, leverage and etc. to know their level of influence on the dividend payout by companies under study in Ghana. He used panel data of 11 financial institutions and analyzed the same by applying correlation and panel regression with both fixed and random effect models. Study revealed that age of firm, collateral and liquidity are the determinants of dividend policy.

Ritu Gangil and Navita Nathani (2018) investigated the dividend policy of the FMCG sector. Firms coming under NSE 100 are selected for the study and their data for the period of ten years was used. Factor analysis was carried out to select the factors which are deemed to be having influence on dividend policy and later to these factors, multiple regressions applied to find most significant factors. Accordingly, the result of factor analysis is firm size, profitability, liquidity, and market value and growth opportunities and among these growth opportunities and profitability are the determinants of dividend policy.

In summary, the literature review shows out that profitability, growth of firm, debt to equity ratio, investment opportunity, liquidity and firm size may have an effect on the ratio of dividend payout.

**Statement of the Problem**

Dividend policy is nothing but payout of part of profit and is influenced by many factors. But these factors, however, change according to time and situation, nature of firm’s industry, growth opportunities and types of shareholders of firms. BSE Sensex companies are the best samples for conducting study as these companies are financially sound and well established, larger in sizes; their stocks are being most actively traded, and are the representative of various industrial sectors. Dividend policy of these financially sound companies is important to both shareholders and management in many ways and dividend payout by companies depend on many factors including financial and non-financial. When it is the case, identification of the factors to be considered as influential or impactful in deciding the dividend payout of firms seems necessary to be done. To find out the determinants of dividend policy, the various financial ratios are selected after reviewing the available literature and the same ratios are to be examined in this study. Hence, the present study’s focus is on the determinants of dividend policy (Dividend payout ratio) of selected BSE sensex companies.

**Objectives of the Study**

1. To identify and test the association of different financial ratios with dividend payout ratio of firms.
2. To determine the level of impact of selected financial ratios (variables) on dividend payout ratio of firms.

**Study Sample**

Sample for the study consists of 15 companies and are selected randomly. They are Asian paints, Bajaj auto, BhartiAirtel, Coal India, HUL, HDFC, Infosys, ITC, RIL, TCS, Larsen and Toubro, Tata Motors, Vedanta, Tata Steel and Wipro. All these companies are among the constituents of S&P BSE Sensex.

**Data for the Study**

Based on the review of literature, the following financial ratios (used as independent variables in the OLS regression model) are found to be influential/bearing on dividend payout ratio (Dividend Policy) of firms:

Ratios (variables)	Definition
Profitability ratio	EBIT/Total Assets
Growth of firm ratio	Growth in net income(Present income-Past income/Past income)
Debt to equity ratio	Total liabilities/ Shareholder’s equity
Investment opportunity ratio	Retained earnings/Total Assets
Current ratio	Current Assets/Current liabilities
Firm size	Natural log of total assets

Data for the above mentioned ratios are collected from secondary sources such as annual reports of companies, websites like moneycontrol.com, ETMarkets.Com and others for the period from 2007 to 2017. The required collected data such as dividend payout, EBIT, total assets, total debt capital, shareholders equity, retained earnings, current assets and current liabilities, and profit after tax have been processed to obtain dividend payout ratio, profitability ratio, growth of firm ratio, debt- equity ratio, investment opportunity ratio, current ratio, and firm size.

The selected financial ratios of the sample companies are arranged to the form of panel data for the purpose of analysis using pooled OLS model.

**Tools and Techniques used**

1. Descriptive Statistics
2. Pearson Correlation Test
3. Regression Analysis

**Model of the Study**

Pooled OLS model

$$DPR_{it} = \beta_0 + \beta_1 Profit_{it} + \beta_2 Gro_{it} + \beta_3 Lev_{it} + \beta_4 Inv_{it} + \beta_5 Liqu_{it} + \beta_6 FS_{it} + \epsilon_{it}$$

Where,

i=Company

t= time (year)

$\beta_0$  to  $\beta_6$  are the coefficients of the regression model

Ratios are used as dependent and independent variables.

Based on the objectives, the following six hypothesis statements are developed for each financial ratio parameter to check their significant impact on dividend payout ratio.

**Null Hypotheses**

**H<sub>1</sub>:** Profitability ratio has no significant impact on dividend payout ratio

**H<sub>2</sub>:** Debt-equity ratio has no significant impact on dividend payout ratio

**H<sub>3</sub>:** Investment opportunity ratio has no significant impact on dividend payout ratio

**H<sub>4</sub>:** Current ratio has no significant impact on dividend payout ratio

**H<sub>5</sub>:** Firm size has no significant impact on dividend payout ratio

**H<sub>6</sub>:** Growth of firm has no significant impact on dividend payout ratio

From the above table 1, the descriptive statistics of dependent variable and independent variables are calculated by using SPSS from the period 2007 to 2017 containing a sample of 15 companies with 150 observations from each variables selected under study and found the mean value of DP ratio is 31.74% per share with an average deviation of 33.89 rupee per share. As deviation from mean is high, which indicates that dividend payout ratio of selected companies has variations. Whereas mean and standard deviation value of independent variables are profitability ratio 0.19 & 0.11, debt-equity ratio 2.08 & 2.10, investment opportunity ratio 0.15 & 0.94, liquidity ratio 1.99 & 2.97, firmsize 10.91 & 1.28, and growth ratio of firm 0.03 & 1.20 respectively.

## Analysis and Interpretation

**Table 1: Descriptive statistics of the variables**

Variables	N (Observation)	Minimum	Maximum	Mean	Std. Deviation
Dividend Payout Ratio	150	-202.780000	133.1100000	31.73536912	33.89321152
Profitability	150	-0.09125235	0.665203394	0.190231345	0.108231992
D/E Ratio	150	0.147582697	11.98850771	2.075365870	2.104677862
Investment Opportunity	150	-0.07473702	11.59043706	0.153712863	0.943467004
Liquidity	150	0.020000000	22.90000000	1.992266667	2.971832451
Firm size	150	7.835183755	13.47798537	10.90992929	1.280459593
Growth of firm	150	-5.47137880	10.07310705	0.027116163	1.204240185

Source: Research findings/ SPSS results

**Table 2: Model summaries**

Model	R (Correlation)	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.389 <sup>a</sup>	0.152	0.116	31.8711584	0.152	4.229	6	142	0.001	0.991

Source: Research findings/ SPSS results

- Predictors: (Constant), Growth, Investment Opportunity, Liquidity, Firm Size, Debt-equity Ratio and Profitability
- Dependent Variable: Dividend Payout Ratio

The result of the regression analysis between dependent and independent variables are seen in the table-2. The R value in the above table indicates that the relationship (Correlation) between dependent and independent is 38.9%. The coefficient of determination,  $R^2$ , value is 0.152 which means 15.2% of the change in dependent variable is explained by the independent variables used in the model. Accordingly, around 15.2 percent of the total dividend payout ratio of all the companies selected under study is contributed/ explained by the independent variables selected under the study. The model also depicts the value of

standard deviation, which is about 31.87 indicating greater variations. The  $R^2$  value is also the measure of overall fitness of the model. The present model explains only about 15.2% and the rest is explained by the other factors not included in the model.

From the above table 3, the coefficients of explanatory variables (independent) along with their standard error, t-statistics and P-value are seen. VIF-Variation inflation factors of all independent variables used in the model are below 10. Hence there is no problem of high co-linearity between variables. Among the six explanatory variables, the profitability variable's value is statistically significant at 5% significance level as its t-statistic and p-value are 2.707 and 0.008 respectively. The other explanatory variables are not statistically significant with the dependent variable, DPR as their p-values are not within the significant range.

**Table: 3 Regression Model Results**

Model	Variables	Coefficient of variables	Std. Error	t-statistics	P-value	VIF
1	(Constant)	52.215	36.729	1.422	0.157	
	Profitability Ratio	99.745	36.850	2.707	0.008	2.327
	D/E Ratio	1.829	1.522	1.202	0.231	1.504
	Investment Opportunity Ratio	0.300	2.805	0.107	0.915	1.028
	Current Ratio	0.342	0.905	0.378	0.706	1.060
	Firm size	-4.019	2.916	-1.378	0.170	1.965
	Growth Ratio	-0.487	2.188	-0.223	0.824	1.018

Source: Research findings/ SPSS results

**Table: 4 Correlations**

Variables	Pearson Correlation	DP Ratio	Profitability ratio	D/E Ratio	Investment Opportunity	Current Ratio	Firm Size	Growth Ratio
DP Ratio	Pearson Correlation	1	.360**	-0.114	0.053	0.041	-.322**	0.009
	Sig. (2-tailed)		0.000	0.167	0.523	0.622	0.000	0.912
	N	149	149	149	149	149	149	149
Profitability Ratio	Pearson Correlation	.360**	1	-.538**	0.148	-0.025	-.691**	0.106
	Sig. (2-tailed)	0.000		0.000	0.071	0.765	0.000	0.196
	N	149	150	150	150	150	150	150
D/E Ratio	Pearson Correlation	-0.114	-.538**	1	-0.099	.212**	.419**	-0.100
	Sig. (2-tailed)	0.167	0.000		0.230	0.009	0.000	0.225
	N	149	150	150	150	150	150	150
Investment Opportunity Ratio	Pearson Correlation	0.053	0.148	-0.099	1	-0.021	-0.058	0.001
	Sig. (2-tailed)	0.523	0.071	0.230		0.803	0.482	0.987
	N	149	150	150	150	150	150	150
Current Ratio	Pearson Correlation	0.041	-0.025	.212**	-0.021	1	0.045	-0.014
	Sig. (2-tailed)	0.622	0.765	0.009	0.803		0.581	0.861
	N	149	150	150	150	150	150	150
Firm size	Pearson Correlation	-.322**	-.691**	.419**	-0.058	0.045	1	-0.035
	Sig. (2-tailed)	0.000	0.000	0.000	0.482	0.581		0.673
	N	149	150	150	150	150	150	150
Growth Ratio	Pearson Correlation	0.009	0.106	-0.100	0.001	-0.014	-0.035	1
	Sig. (2-tailed)	0.912	0.196	0.225	0.987	0.861	0.673	
	N	149	150	150	150	150	150	150

Source: Research findings/ SPSS results

\*\* Correlation is significant at the 0.01 level (2 tailed)

**Table 5: Testing of hypothesis**

No	Hypotheses	P-Values	Results
1	Profitability ratio has no significant impact on dividend payout ratio	0.008<0.05	Rejected
2	Debt-equity ratio has no significant impact on dividend payout ratio	0.231>0.05	Accepted
3	Investment opportunity has no significant impact on dividend payout ratio	0.915>0.05	Accepted
4	Current ratio has no significant impact on dividend payout ratio	0.706>0.05	Accepted
5	Firm size has no significant impact on dividend payout ratio	0.170>0.05	Accepted
6	Growth of firm has no significant impact on dividend payout ratio	0.824>0.05	Accepted

The correlations matrix shows the relationship or association between the dependent and independent variables and between the independent variables. The results of the correlations matrix are as follows: The correlation between dividend payout ratio and profitability ratio is 0.360 positive and significant which shows that the DPR is dependent on profitability ratio. The relationship between DPR and firm size (-0.322) which is negative but significant at 1% level of significance. Whereas correlation between independent variables such as Profitability and D/E is -.538 which is negative and high correlation, Profitability and

Firm size is -.691 which is also negative and high correlation, Firm size and D/E is 0.419 which is positive and high correlation, D/E and Liquidity is 0.212 which is positive. And correlations between independent variables are significant at 1% level of significance.

Among the other independent variables, only profitability ratio is positively significantly associated with dependent variable- dividend payout ratio as P-value between them is 0.008 at 5% level of significance. Hence, the null hypothesis 'Profitability ratio has no impact on the dividend payout ratio' is rejected.

## Conclusion

The present analytical study examined the selected financial ratios such as profitability ratio, debt-equity ratio, investment opportunity ratio, current ratio, firm size and growth of firm ratio and their impact on dividend payout ratio. Examination of selected variables (financial ratios) is done in the light of objectives of the study with the help of Correlation and Regressions Test. As a result, among the other independent variables, only profitability ratio variable is statistically and significantly associated with the dependent variable, Dividend payout ratio and therefore, profitability ratio from among the selected financial ratios is the only determinant of dividend payout ratio of companies selected under study.

**Conflict of Interest:** None.

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