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Determinants of dividend policy of pharmaceutical companies in India

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Abstract
The pharmaceutical industry plays a considerable role in developing vaccines and medications for prevention and reduction in disease incidence, treatment of ailments and enhancement in quality of life by contributing to innovative research and engaging in technological advancements to meet the complex healthcare demands of the population. India globally occupies 3rd position in pharmaceutical production by volume and 14th by value. The domestic pharma industry consists of 3,000 drug companies with 10,500 manufacturing units. It delivers drugs to maintain health or prevent infections and alleviate diseases distressing the global population. The current research study aimed to reveal the determinants of dividend pay-out of Indian pharmaceutical companies. Dividend policy is a crucial financial policy on paying cash dividend presently or paying an increased dividend at a later stage. At times of cash surplus, the management could pay out a portion or all of those surplus earnings in the form of cash dividends or to repurchase the company's stock through a share buyback program. The objectives of the current research study are, to identify the factors determining dividend payout of pharmaceutical companies in India, to examine the relationship between dividend payout and corporate profitability and to analyse the impact of dividend policy on the firm value. Secondary data was collected from the published annual reports for the years 2015-16 to 2019-20.

Keywords: Indian pharmaceutical industry, dividend policy, multiple regression, ANOVA, pearson correlation

Introduction

The phenomena of Indian domestic pharmaceutical market is estimated to be US$ 42 billion in 2021 and is projected to reach US$ 65 billion by 2024 and further expand to reach US$ 120-130 billion by 2030. In the transformed Indian economic scenario, dividends are vulnerable to radical adjustments. Investors looking for capital expansion may prefer lower pay-out ratio because capital gains are taxed at a lower rate. The current study focuses on the determinants of dividends and its performance of select pharmaceutical companies in India. Dividend is a portion of profit and retained earnings that a company pays out to its shareholders. While a business concern generates a profit and accumulates retained earnings, those earnings can be either reinvested into the business or dispersed to stockholders as dividend. The annual dividend per share divided by the share price is the dividend yield. Utmost dividends are paid in the form of cash. Dividend payout is a vital measure for every business, be it big or small because it helps the investors and shareholders to determine efficiency of the company and its associated scope for future potential growth.

Research Objectives and Methodology

The Present study is a research on selected Indian pharmaceutical companies to meet the specified objectives. The variables like short term debt ratio, return of assets, return of equity, growth, market capitalisation, firm size, leverages are used. In this research, Multi-staged sampling method is used for selection of sample. For analysis, Five years financial data are collected from the published annual reports for the year 2015-16 to 2019-20 of selected pharmaceutical companies. The criteria for selection of sample are, the companies should have declared dividend continuously during the period of study, the annual turnover of the companies should be above ₹10,000 crores, and the companies should have been listed

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in Bombay stock exchange during the period of study. Accordingly, five pharmaceutical companies are selected namely, Lupin Pharmaceutical Limited, Cipla Limited, Sun Pharmaceutical Industries Limited, Dr. Reddy's Laboratories Limited and Torrent Pharmaceuticals Limited.

Results and Discussion
The variables selected for the study includes; (i) dependent variables – dividend payout (DPR), return on asset (ROA), and return on equity (ROE) and (ii) independent variables - Earnings per share (EPS), Risk (RK), Growth (GR), Leverage (LVG), return on asset (ROA), Return on equity (ROE), Firm size (FS), Cash holdings (CH), Liquidity ratio (LR), Solvency ratio (SR) and dividend payout (DPR).

Factors determining the Dividend Payout – ANOVA Results
1. Sun Pharmaceutical Industries Limited

Table 1.1 Model Summary

Model	R	R Square	Adjusted Square	Std. Error of estimate
1	.491	.241	.157	12.731

A. Predictors: Dividend Payout (Dependent Variable)

Table 1.2: ANOVA[c,d]

Model	Sum of squares	df	Mean square	f	Sig.
1.Regression Residual Total	464.283 1458.750 1923.033	1 9 10	464.283 162.083	2.864	.125

a. Predictors: Dependent Variables

Table 1.3: Coefficients[a,b]

Model	Unstandardized coefficients		Standardized Coefficients	t	Sig.
	B	Std. error	Beta		
1 Dependent variable	38.049	22.481	.491	1.692	.125

a. Dependent Variable
Source: Author's calculation

The R square is the co-efficient of determination that shows dividend payout varies with the changes in EPS, RK, GR, LVG, ROA, ROE, FS, CH, LR, and SR. From the above table the value of R square is 0.241. The regression co-efficient in the above table showed the significance of F statistics is 0.125 which is greater than 0.05. This implies that there is a strong positive relationship between the independent variable and dependent variable.

2. Lupin Limited

Table 2.1: Model Summary

Model	R	R Squareb	Adjusted Square	R	Std. Error of the Estimate
1	.335a	.112	.014		29.797167

A. Predictors: Dividend Payout (Dependent Variables)

Table 2.2: ANOVA[c]

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1011.243	1	1011.243	1.139	.314a
Residual	7990.841	9	887.871		
Total	9002.084b	1			

a. Predictors: Dependent Variable

Table 2.3: Coefficients[a,b]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 Dependent Variable	.528	.495	.335	1.067	.314

a. Dependent Variable
Source: Author's calculation

The R square is the co-efficient of determination that shows dividend payout varies with changes in EPS, RK, GR, LVG, ROA, ROE, FS, CH, LR, and SR. from the above table the value of R square is 0.112. The regression co-efficient in the above table showed the significance of F statistics is 0.314 which is greater than 0.05. Lupin pharma should concentrate on balancing liquidity position and dividend payout. This implies that there is a mild relationship between the independent variable (EPS, GR, RK, LVG, ROA, ROE, FS, CH, LR, and SR) and dependent variable (dividend payout).

3. Dr. Reddy's Laboratories Limited

Table 3.1: Model Summary

Model	R	R Squareb	Adjusted Square	R	Std. Error of the Estimate
1	.427a	.183	.092		31.563044

a. Predictors: Dividend Payout (Dependent Variables)

Table 3.2: Anova

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2001.933	1	2001.933	2.010	.190[a]
Residual	8966.032	9	996.226		
Total	10967.965[b]	10			

A. Predictors: Dependent Variables

Table 3.3: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 Dependent variables	62.073	43.788	.427	1.418	.190

a. Dependent Variable

Source: Author's calculation

The R square is the coefficient of determination that shows the dividend payout varies with change in EPS, RK, GR, LVG, ROA, ROE, FS, CH, LR, and SR. From the above table the values of R square are 0.183. The regression coefficient in the above table showed the significance of F statistics is 0.190 which is greater than 0.05. This implies that there is a moderate relationship between the EPS, RK, GR, LVG, ROA, ROE, CH, FS, LR, SR and dividend payout.

4. Cipla Limited

Table 4.1: Model Summary

Model	R	R Square[b]	Adjusted Square	R	Std. Error of the estimate
1	.518[a]	.268	.187		10.640616

a. Predictors:　　Dividend Payout (Dependent Variables)

Table 4.2: ANOVA[c,d]

Model	Sum of Squares	df	Mean Square	F	Sig.
1　Regression	373.329	1	373.329	3.297	.103[a]
Residual	1019.004	9	113.223		
Total	1392.334[b]	10			

A. Predictors: Dependent Variables

Table 4.3: Coefficients[a,b]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1Dependent Variables	37.946	20.897	.518	1.816	.103

a. Dependent Variable

Source: Author's calculation

The R square is the co-efficient of determination that shows dividend payout varies with changes in EPS, RK, GR, LVG, ROA, ROE, FS, CH, LR and SR. From the above table the value of R square is 0. 268. This implies that there is a moderate positive relationship between the independent variable and dependent variable. The regression co-efficient in the above table showed the significance of F statistics is 0.103 which is greater than 0.05. This reveals that Lupin pharma can concentrate on reducing its share price volatility so as to increase the wealth of its potential investors.

5. Torrent pharmaceuticals ltd.

Table 5.1 Model Summary

Model	R	R Square[b]	Adjusted Square	R	Std. Error of the Estimate
1	.467[a]	.218	.132		19.956792

a. Predictors: Dividend Payout (Dependent Variables)

Table 5.2: ANOVA[c,d]

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1001.411	1	1001.411	2.514	.147[a]
Residual	3584.462	9	398.274		
Total	4585.872[b]	10			

a. Predictors: Dependent Variables

Table 5.3: Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Dependent Variables	1.568	.989	.467	1.586	.147

a. Dependent Variable

Source: Author's calculation

The R square is the co-efficient of determination that shows dividend payout varies with changes in EPS, RK, GR, LVG, ROA, ROE, FS, CH, LR, SR. From the above table the value of R square is 0.218.This implies that there is a moderate relationship between independent variable (EPS, RK, GR, LVG, ROA, ROE, FS, CH, LR, SR) and dependent variable(dividend payout).The regression co-efficient in the above table showed the significance of F statistics is 0.147 which is greater than 0.05.

Relationship between Dividend Payout and Corporate Profitability - Multiple Regression results

(1) Sun Pharmaceutical Industries Limited
On analysing Return on assets (ROA) and dividend payout (DP), the R square value is 0.010 implied very low positive relationship between the independent variable (dividend payout) and dependent variables (return on assets). The regression co-efficient revealed significance of F statistics as 0.870, that is greater than 0.05. Return on equity (ROE) and dividend pay-out showed the R square as 0.666. This indicates a strong positive relationship between dividend payout (independent variable) and ROE (dependent variable). The regression co-efficient showed the significance of F statistics is 0.092 which is greater than 0.05. The increase in ROE leads to an increase in payout. Hence shareholders payout can be increased by increasing the return in sun pharmaceuticals.

(2) Lupin Limited
On examining ROE and dividend payout, the R square value is 0. 131. The regression co-efficient showed that significance of the F statistics is 0.638 which is greater than 0.05 implied that there exists a less significant relationship between ROA and dividend payout. ROE and dividend payout revealed the R square as 0.147 and the regression co-efficient showed the significance of the F statistics to be 0.524 showed less significant relationship between return on equity and dividend payout.

(3) Dr. Reddy's Laboratories Limited
ROA and dividend payout showed R square value 0.518 inferred a very strong relation with F statistics as 0.170 which is greater than 0.05. This revealed that an increase in ROA leads to increase in payout revealing the company's policy of distributing the majority of the portion of returns as dividend. The study of ROE and DP implied R square value as 0.901. This indicated a very strong relationship between independent variable and dependent variables. The regression co-efficient of the F statistics is 0.014 signifies that Dr. Reddy's laboratory distribute higher dividend as a result of increase in returns.

(4) Cipla Limited
On probing ROA and payout, the R square value is 0.008 implied that there is a very low positive relationship. The regression co-efficient showed significance of the F statistics is 0.887. ROE and dividend payout had the R square value of 0.212 a very low positive relationship with F statistics 0.436. ROA and payout showed value of R square is 0.317 having moderate relationship and of F statistics is 0.323. The company can adapt new strategy to increase its ROA so as to increase its returns. ROE and DP had R square of 0.399 with moderate relationship and F statistics 0.253 signifying Torrent pharmaceuticals to concentrate on increasing the ROE so as to increase the wealth of shareholders.

(5) Torrent Pharma Ltd
ROA and DP showed moderate relationship with R square 0.317. The regression co-efficient showed significance of F statistics is 0.323, which is greater than 0.05. The company can adapt new strategy to increase its ROA so as to increase the profitability. From the analysis co-efficient of determination i.e. the R square is 0. 399 indicated a moderate relationship between payout and ROE. The regression co-efficient showed the significance of F statistics is 0.253 which is greater than 0.05. Torrent pharmaceuticals can concentrate on increasing the return on equity so as to increase the shareholders' wealth.

C. Impact of dividend policy on the firm value – using Pearson's correlation

Table 6: Pearson's correlation Results

Companies			Dividend Payout Ratio	Sig. (2-Tailed)
Sun Pharma	Firm Value	Pearson Correlation	-0.959**	**at 0.01 level
		Sig (2-tailed)	0.01	
		N	5	
Lupin	Firm Value	Pearson Correlation	0.204	
		Sig (2-tailed)	0.742	
		N	5	
Dr. Reddy Lab Ltd	Firm Value	Pearson Correlation	-0.878	
		Sig (2-tailed)	0.05	
		N	5	
Cipla Ltd	Firm Value	Pearson Correlation	-0.68	
		Sig (2-tailed)	0.206	
		N	5	
Torrent Pharma Ltd	Firm Value	Pearson Correlation	-0.29	
		Sig (2-tailed)	0.636	
		N	5	

** Correlation is significant at 0.01 level
Source: Author's calculation

In Sun pharmaceutical industries limited, it is absorbed that the dividend payout ratio is (r=0.959) has been negatively correlated with the firm value at the significance of 1% level. Then again the firm value (r=0.959) has been

correlated negatively with the dividend payout showing significance of 1% level. If the dividend payout increases the firm value decreases. This signifies that in order to increase the firm value Sun pharma can reduce its dividend payout to some extend and concentrate on increasing its retained earnings. In Lupin Limited, it is observed that dividend payout ratio (r=0.204) has been less correlated with firm value showing significance at 1% level during the period of study. Then again firm value (r=0.204) has been correlated with dividend payout showing significance at 1% level.

In Dr. Reddy's Laboratories Limited, it is absorbed that dividend payout ratio (r=0.878) has been negatively correlated with firm value inferring low significance level. Then again firm value (r=-0.878) has been correlated with dividend payout showing low significance level. A change in trade cycle, issuance of new share or debenture may show a positive impact. In Cipla Limited, it is absorbed that dividend payout ratio (r=-0.680) has been negatively correlated with firm value showing low significance level. Then again firm value (r=-0.680) has been correlated with dividend payout showing lower significance level. If the sample period increased then there can be a relationship between the variables. In Torrent Pharmaceuticals Limited, it is absorbed that dividend payout ratio (r=-0.290) has been negatively correlated with firm value implying less significance level. Then again firm value (r=-0.290) has been correlated with dividend payout showing less significance level.

Conclusion
During 2016, India earned a GDP of ₹2.26 lakh crore dollars revealing a healthy growth rate of 7.1%. It is predicted that if the current flow of events continues, by 2028 India will be the third largest economy in the world, overtaking Japan's economy. The pharmaceutical sector possess a huge demand with the estimated worth of US$ 6 billion that attracts giant pharmaceutical suppliers throughout the world to move towards the Indian pharmaceutical Industry. Implications offered from the research study are, Sun Pharmaceuticals can provide a source of livelihood to those investors who view dividends as a source of funds to meet day-to-day expenses. It also revealed that the dividend payout ratio has been negatively correlated with the firm value for sun pharmaceuticals industry limited. Cipla can focus on reducing its share price volatility so as to increase the firm value. Lupin should adapt new strategy for effective utilization of its assets so as to make better profits with a view to increase the returns to its potential investors. It should contemplate on balancing liquidity position and dividend payout. In Dr. Reddy's ROA and ROE depicted a higher dividend payout. It can shrink its dividend payout to some point so as to enhance its retained earnings for its future expansion. Sun Pharmaceuticals can improve the credit standing in order to raise finance at cheaper rates. Torrent can concentrate on increasing its ROE in order to increase the return to shareholders.

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