

Determinants of dividend policy: An empirical study of selected pharmaceutical firms in India

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Abstract

In this research paper attempt has been made to study the determinants of dividend policy of selected pharmaceutical firms in India. Researcher has collected secondary data from different website and annual reports of respective companies. The sample size was of five pharmaceutical firms. The study period was of five years from 2012-13 to 2020-21. In order to analyse the data, Descriptive statistics, correlation matrix OLS regression and fixed effect model were used. Correlation matrix shows that DPS has negative but significant correlation with Growth. The DPS has positive and significant correlation with EPS, ROCE, ROA and Financial leverage. The result of regression shows that out of nine independent variables, two independent variables EPS and Financial Leverage have affected to DPS significantly. Other independent variables like DPR, ROCE, EV, ROA, Growth, Tobin's Q and Firm size have been insignificant to DPS. The fixed effect model suggested that all selected independent variable have been insignificant to DPS.

Keywords: Dividend policy, Earning per share, Dividend per share, Pharmaceutical firms

JEL Classification: G11, G35

Introduction

Dividend policy is important decision for financial managers. Right decision creates positive impact on stock market. Majority Shareholders prefer dividend because they believe that future is uncertain. Dividend policy decision is associated with brand image of the firm. Decision maker has to consider many factors while deciding on dividend policy. There are certain important factors like nature of earnings, age of the firm, liquidity position, and preference of shareholders, requirements of institutional investors, legal constraints, investment opportunities, and availability of capital, inflation, dividend policy of competitors, past trend of dividend payment, corporate taxation and financial leverage. Certain experts have developed some theories for dividend policy decision to guide the decision makers. There are two types of theories –relevant theory and irrelevant theory.

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Relevant theory says that dividend policy decision has an impact on stock price (Myron Gordon, John Linter, James alter and Richardson) conversely irrelevant theory says that dividend policy has no impact on stock price (Miller and Modigliani). Considering above theory, researcher has tries to identify the most influencing factors for dividend policy. However all factors identified by researcher are internal factors namely earning per share, return on capital employed , enterprise value, return on assets, earning retention ratio, financial leverage, growth in sales, Tobin's q and firms size. Dividend policy means dividend per share and dividend payout ratio. With help of pooled OLS regression, researcher has tried to examine the determinants of dividend policy.

Pharmaceutical Sector

India is the largest provider of generic drugs globally with the Indian generics accounting for 20 per cent of global exports in terms of volume. Of late, consolidation has become an important characteristic of the Indian pharmaceutical market as the industry is highly fragmented. India enjoys an important position in the global pharmaceuticals sector. The country also has a large pool of scientists and engineers who have the potential to steer the industry ahead to an even higher level. Presently over 80 per cent of the antiretroviral drugs used globally to combat AIDS (Acquired Immuno Deficiency Syndrome) are supplied by Indian pharmaceutical firms. The UN-backed Medicines Patent Pool has signed six sub-licences with Aurobindo, Cipla, Desano, Emcure, Hetero Labs and Laurus Labs, allowing them to make generic anti-AIDS medicine TenofovirAlafenamide (TAF) for 112 developing countries.

Indian pharmaceutical sector is estimated to account for 3.1– 3.6 per cent of the global pharmaceutical industry in value terms and 10 per cent in volume terms. It is expected to grow to US\$100 billion by 2025. The market is expected to grow to US\$ 55 billion by 2020, thereby emerging as the sixth largest pharmaceutical market globally by absolute size. Branded generics dominate the pharmaceuticals market, constituting nearly 80 per cent of the market share (in terms of revenues). The sector is expected to generate 58,000 additional job opportunities by the year 2025.

Review of literature

Kuzucu (2015) investigated the determinants of Dividend Policy on Turkish listed firm during the study period of 2006 to 2013 and concluded that financial leverage, growth rate, profitability, and family control have negative relationship with dividend, whereas the relationship of firm size, age and P/E ratio has been positive. **F-Dąbrowska et al. (2020)** worked on determinants of dividend payout decisions of publicly listed food industry in emerging market and found that free cash flow liquidity, profitability and firm size have been significant for dividend policy decision. **Quoc & Nhat (2020)** studied on determinants of dividend policy of the companies from Asian countries during the study period of 2009 to 2017 using fixed effect model and found that firm size, liquidity and growth have negatively impact on dividend distribution, whereas, leverage has positive effect on dividend. **Bogna (2015)** worked on determinants of dividend policy of polish listed firms and advocated that leverage and return on equity have been significant to dividend payout ratio. **Nathani & Gangil (2019)** worked on determinants of dividend in India companies during the study

period of 2006-2007 to 2015-2016 and found that liquidity, dividend distribution tax, investment opportunities and retained earnings have been significant determinant of dividend policy. **Lestari (2018)** worked on determinants of dividend policy of Indonesian firms during the study period of 2011 to 2015 and concluded that free cash flow and firm size have significant effect on dividend policy decision, whereas, debt, growth opportunities, investment opportunities, largest shareholders and firm risk have no significant effect on dividend policy. **Bhattacharya (1979)** expressed that increase in dividend implies that company has very good expected cash flow and performance of the company will be good in future. **Aivazian et al. (2003)** studied on dividend policy of emerging market from US firms and found that Debt ratio and tangibility have negatively affected to dividend policy. The study concluded that firms from emerging market pay higher amount of dividend as compared to the developed market firms. **Amidu & Abor (2006)** studied dividend payout ratios of 20 companies listed on Ghana stock exchange during the period of 1998-2003. The study shows that profitability, tax and cash flow and market to book value and growth in sales have been negative but significant to dividend payout ratio. **Maldajian & Khoury (2014)** researched on dividend policy of list banks of Lebanese during the study period of 2005 to 2011 and found that risk, firm's size, and past year's dividend of the firms have significantly affected to dividend payout policies. Opportunities and growth have been negative to dividend payout policies. The study concluded that the selected banks believed in retaining earning rather than distributing earning to the shareholders.

Objectives of the Study

1. To study dividend policy of selected pharmaceutical firm.
2. To identify the determinants of dividend policy of selected pharmaceutical firms.

Methodology of the Study

Data, Statistical Tools and Techniques:

The requisite secondary data for estimating the determinants of dividend policy have been collected from financial statement published by selected pharmaceutical firms for the period from 2012-2013 to 2016-17. Besides, data have also been collected from Capitaline, moneycontrol.com and ACE-equity database. Under the study, convenient sample method has been used. The statistical tools techniques used for the analysis of the data are descriptive statistics, correlation and multiple regressions.

Estimation Model:

$$DPS = \alpha + \beta_1(DPR) + \beta_2(EPS) + \beta_3(ROA) + \beta_4(LEV) + \beta_5(Growth) + \beta_6(Tobin's\ q) + \beta_7(Size) + \beta_8(EV) + \mu_{it}$$

Where,

DPS : Dividend per share; DPR: Dividend payout ratio; EPS: Earning per share; ROA: Return on assets; LEV: Financial leverage; Growth: Growth in sales; Size: Total assets; EV: Enterprise value

Null hypothesis: Factors like Dividend payout, earning per share, return on capital employed, enterprise value, return on assets, financial leverage, growth, Tobin's q, and firm size do not impact significantly on DPS.

Alternative hypothesis: factors like Dividend payout, earning per share, return on capital employed, enterprise value, return on assets, financial leverage, growth, Tobin's q, and firm size impact significantly on DPS

Results and Discussion

Table1: Descriptive statistics of selected factors

Variable	N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
SIZE	45	3.386	4.499	4.039	0.290	-.454	.354	-.23	.695
tobin's q	45	0.058	15.46	4.604	3.165	1.827	.354	3.73	.695
DPR	45	-688.64	100.24	1.61	108.76	-6.037	.354	39.08	.695
DPS	45	1.0	35.0	10.77	9.60	1.08	.354	.22	.695
EPS	45	-13.66	177.23	42.79	39.64	1.233	.354	1.91	.695
ROCE	45	-3.57	48.90	16.46	11.12	.903	.354	1.18	.695
EV	45	3.791	5.175	4.63	0.25	-.731	.354	3.02	.695
ROA	45	-20.44	35.61	11.60	10.54	-.043	.354	1.14	.695
LEV	45	0.00	1.24	.24	.29	1.852	.354	3.39	.695
GROWTH	45	-38.28	161.41	63.98	46.91	-.165	.354	-.75	.695

Source: Authors' Calculation

Table 1 indicates descriptive statistic of dependent and independent variable. Mean of DPR was 1.61 and standard deviation was 108.76%% which shows high fluctuations in dividend per share during the study period. Dividend payout ratio shows low fluctuations because standard deviation was 9.60%%. There was huge gap between minimum and maximum dividend payout ratio. EPS has a range between -13.66 to 177.23 with mean of 42.79. Enterprise value was in rupee but for the calculation purpose log value was taken. Log of enterprise value shows less fluctuation during the study period which means that value enterprise has been stable. Mean of Return on assets was 11.60% with standard deviation of 10.54%. Range of financial leverage has been 0.00 to 1.24 with standard deviation of 0.29%. Financial leverage does not indicate good position. Growth in sales shows fluctuated trend with range of 38.28 to 161.41. Tobin's q shows very good situation. Assets of the firm are taken as size of firm.

Table 2 indicates correlation matrix between dependent variable and independent variable. EPS, ROA and Leverage are significantly correlated with dividend per share. DPR is positively related with DPS with insignificant relationship. EPS has positively and significant relationship with DPS. Enterprise value has negative and insignificant relation with DPS. ROA has also positive and significant relation with DPS. Leverage has also positive and significant relation with DPS. Growth has negative and significant relation with DPS. Tobin's q and firm size have positive but significant relation with DPS. In short, there is also insignificant correlation between EPS and ROA& Tobin's q. Firm size and

ROA have significant correlation with enterprise value. ROA has negative correlation with Tobin's q. Leverage and size of firm is significantly correlated.

Table 2: Pearson Correlation coefficient between DPS and independents parameters

	DPR	DPS	EPS	ROCE	EV	ROA	LEV	GROWTH	tobin's q	SIZE
DPR	1									
DPS	.189	1								
EPS	.193	.757**	1							
ROCE	.246	.334*	.491**	1						
EV	-.053	-.206	-.065	-.300*	1					
ROA	.213	.432**	.582**	.799**	-.371*	1				
LEV	.077	.456**	.041	-.049	-.260	.041	1			
GROWTH	-.177	-.299*	-.181	.146	.218	.153	-.239	1		
tobin's q	-.098	-.228	-.277	-.081	.150	-.212	-.056	-.099	1	
SIZE	.010	-.101	.064	-.239	.639**	-.263	-.335*	.327*	-.318*	1

Note: **. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Table 3: Result of OLS Regression Analysis

Dependent Variable: DPS

Independent Variables	Coefficient	Std. Error	<i>t</i>	<i>p</i>
DPR	6.311	.008	.001	.999
EPS	.175	.030	5.768	.000
ROA	.012	.124	.096	.924
EV	-3.570	4.858	-.735	.467
ROA	-.009	.153	-.056	.956
LEV	13.809	3.038	4.545	.000
GROWTH	-.015	.023	-.673	.506
tobin's q	.085	.320	.264	.793
SIZE	2.825	4.819	.586	.562
Number of obs = 45, F = 12.502, Prob = 0.000, R-squared = 0.763, Adj R-squared = 0.702				

Table 3 provides result of OLS regression analysis. The table shows that R-square is 0.763 which means the independent variables have caused 76.30% variation in dependent variable. The adjusted R-square is 0.702 which indicates combine effect of explanatory variable have been 70.20% .The t statistics shows that Dividend payout ratio, enterprise value, return on assets,growth,tobin's q and size are insignificant at 5% level of significant. Whereas earning per share and financial leverage are significant at 5% level of significant. F-ratio was 12.50 which shows model is fit. Earnings per share and financial leverage are determinants of dividend policy in pharmaceutical companies.

Table 4 : Fixed effect Regression Model

Dependent Variable: DPS

Variable	Coefficient	Std. Error	<i>t</i>	<i>p</i>
DPR	-0.004052	0.006633	-0.610893	0.5457
EPS	0.070992	0.040549	1.750769	0.0899
ROA	0.099315	0.133468	0.744109	0.4624
EV	6.446647	4.994906	1.290644	0.2064
ROA	-0.125103	0.142155	-0.880044	0.3856
LEV	-9.838974	5.79507	-1.697818	0.0996
GROWTH	-0.020895	0.022367	-0.934169	0.3574
TOBIN_S_Q	0.144033	0.274288	0.525114	0.6032
SIZE	4.61425	4.120239	1.119899	0.2714
Root MSE	3.499708	R-squared		0.86406
Mean dependent var	10.76667	Adjusted R-squared		0.807053
S.D. dependent var	9.599272	S.E. of regression		4.216549
Akaike info criterion	5.965458	Sum squared resid		551.1579
Schwarz criterion	6.527531	Log likelihood		-120.2228
Hannan-Quinn criter.	6.174993	F-statistic		15.15708
Durbin-Watson stat	1.997546	Prob(F-statistic)		0

Table 4 presents result of fixed effect regression analysis. The table shows that R-square is 0.864 which means the independent variables have caused 86.40% variation in dependent variable. The adjusted R-square is 0.807 which indicates combine effect of explanatory variable have been 80.70% .The t statistics shows that DPR, EPS,ROCE, EV, ROA, Leverage, Growth, Tobin's q and firm size are insignificant to DPS at 50% level of significant. Whereas F-ratio was 12.50 which shows model is fit. Fixed effect mode does not find any significant independent variables.

Conclusion

Dividend policy is very important finance decision because it has an implication on the market price of stock. Dividend is paid out of the firm's profit. It means that no profit, no dividend is paid. Thus, payment of dividend is connected with profitability of the firm, which is impacted by internal factors and external factors. The present study has estimated only internal factors which affect the dividend policy decision. From the analysis, it is concluded that dividend payout ratio, enterprise value, return on assets and firm size have negative but insignificant impact on dividend per share. Explanatory variables like earning per share, growth and Tobin's q have positive effect on dividend per share. Only EPS and financial leverage are found significant to dividend per share. On the other hand, based on result derived from fixed effect model concludes that no selected independent variables have been significant determinant.

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