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Trends And Determinants Of Dividend Policy: A Special Focus On Indian Pharmaceutical Industry.

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ABSTRACT

This study aims to analyse the trends and determinants of the pharmaceutical industry. This study is the nature of empirical research. The trends and patterns of dividends and the major determinants that influence the dividend decisions are explored and studied for the pharmaceutical industry. The inter-relationship between the determinants of dividend was identified and explored through applying multiple correlation analysis. The extent of the relationship between the dependent and independent variables was identified and rediscovered by applying multiple regression analysis- a major multivariate tool. In the meanwhile, twelve hypotheses were tested to arrive at the tentative assumption in the formulation of the conceptual framework. ANOVA was applied to test the validity of dividend determinant variables for the pharmaceutical industry. The extent of risk connected to each determinant of dividend in the pharmaceutical industry was manifested by calculating Beta coefficients and finally to contribute to the philosophy of the subject a set of unique and exclusive Structural Equation models were presented for the pharmaceutical industry. The results revealed from the Structural Equation Models applied to the the pharmaceutical industry discovered that the following mediating variables like Earnings Per Share, Debt-Equity Ratio, Sales Growth, Net Profit To Net worth Ratio, and Operating Profit Ratio as the vital determinants for dividend decisions.

Keywords: Model validity, EPS, DER

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INTRODUCTION

Financial markets play an important role in the mobilization of financial resources for long-term investment through financial intermediation. The existence of money markets facilitate trading in short-term debt instruments to meet short-term needs of large users of funds such as governments, banks and similar institutions. Government treasury bills and similar securities, as well as company commercial bills, are examples of instruments traded in the money market. A wide range of financial institutions, including merchant banks, commercial banks, the central bank and other dealers operate in the money market. Public as well as private sector operators make use of various financial instruments to raise and invest short-term funds which, if need be, can be quickly liquidated to satisfy short-term needs. Unlike the money market, the capital market mobilizes long-term debt and equity finance for investments in long-term assets. Capital markets also help to strengthen corporate financial structure and improve the general solvency of the financial system.

The development of stock exchanges is crucial to achieve economic growth for development economics. The increasing globalization of financial markets has heightened interest in emerging markets. However, much of the research in accounting and finance has focused on developed markets.

The topic of dividend policy remains one of the most controversial issues in corporate finance. Dividend may be defined as the distribution of created value to the shareholders. It may be in the form 'Cash Dividend' or through distribution of stocks of the company which is known as 'Stock Dividend'. Dividend policy may be defined as the trade-off between the magnitude of retained earnings and distributed cash or securities.

Dividend payment of a company is looked upon differently by different sets of people associated with the company. For the investors, dividends are not merely means of regular earnings but also an important input for determining the worth and credential of the firm. For managers, dividend payment might well determine the level of investment in profitable investment projects. Lenders look at it carefully because they feel that the more the dividend payment, the less will be the amount available for servicing and redemption of their claims.

STATEMENT OF THE PROBLEM

In spite of the extensive research undertaken into dividend policy, gaps in research remain, from both theoretical and empirical perspectives. These gaps are noted by Allen and Michaely (2003) and DeAngelo, DeAngelo and Skinner (2008) amongst others. In particular, any attempt to achieve a consensus or to find a universal solution to certain dividend problems may not be attainable because dividend policy operates in a real world environment that is multivariate and complicated. Baker, Saadi, and Dutta (2008) note this difficulty of developing a one-size-fits-all explanation for dividend policy, and they explain that factors such as legal regulation, corporate governance, and firm characteristics vary across countries. Frankfurter and Wood (1997) suggest that the, 'Dividend-payment patterns (or what is often referred to as "dividend policy") of firms are a cultural phenomenon, influenced by customs, beliefs, regulations, public opinion, perceptions and hysteria, general economic conditions and several other factors, all in perpetual change, impacting different firms differently. Accordingly, it cannot be modeled mathematically and uniformly for all firms at all times.

Most previous studies have dealt with the dividends policy concept but most of them have dealt with one type of dividend (the cash dividend) (Miller and Modigliani, 1961, Horne and McDonald, 1971, Partington, 1985, Holder et al., 1998) and do not make a clear distinction between the dividends policy concept and dividend types. The dividends policy concept consists of three types of dividends (cash, share and repurchase) (Moyer et al., 1995). A number of studies deals with either share dividend (Barker, 1958, Grinblatt et al., 1984, Bali, 2003) or share repurchase (Ikenberry et al., 1995). The company may distribute profits in the form of either regular cash dividends or it may distribute profits in the form of shares dividends to shareholders. However, both forms may be distributed at the same time. On the other hand, shareholders can also obtain profits (as a capital gains) when the company repurchases its shares, and considers the regular cash dividend as something quite common (Broyles, 2003). Therefore, there is lack of studies covering all three types of dividends together at the same time.

This research is focused on study of dividend trends such as the percentage of dividend paying companies over the past twelve years and also to study the trends among the determinants cutting across the pharmaceutical industry and the decision to pay or change dividends is affected by the key firm characteristics such as firm size, Dividend per share, Earning per share, Existence of organization, growth of sales, tangible assets in the organization, debt and equity ratio, Operating profit ration, net profit ratio, Net profit to networth ratio, Dividend payout ratio and operating cost ratio.

OBJECTIVES OF THE STUDY

- To identify the trends and patterns of major dividend determinants in the pharmaceutical industry
- To find out the inter relationship between the determinants of dividend in the pharmaceutical industry
- To find out the extend of relationship between the dependent and independent variables by applying multiple regression analysis
- To contribute to the philosophy of the subject by offering unique and exclusive models for the pharmaceutical industry that determine dividend decisions

RESEARCH DESIGN

Research design is the blueprint of research work. Basically, since the nature of the study is Empirical and analytical. Several evidences from the earlier researches, company records are taken into consideration and multivariate analysis are used to arrive at the appropriate determinants that have more impact on dividend decisions. This research design is also Analytical because several financial data like sales turnover, EPS, DPS, PE, R&D expenses, EBIT, PAT....etc. are taken into consideration for our analysis.

Study period

The study period is selected from 29th June 2016 to the yearend 29th July of 2018 ie for 2 years. The impact of recent changes surrounding the Indian economy in general and the pharmaceutical industry in particular are studied

Data source

'Capitoline Plus' and 'Capitalstocks.ole', manufactured, maintained and marketed by Capital Market, Mumbai, or 'Prowess', manufactured, maintained and marketed by Centre for Monitoring Indian Economy (CMIE), Mumbai are notable amongst these. These two sources form the primary source of data required for the study.

Tools used in this study

- Trend analysis
- Multiple regression
- Structural Equation modelling
- ANOVA
- Multiple correlation

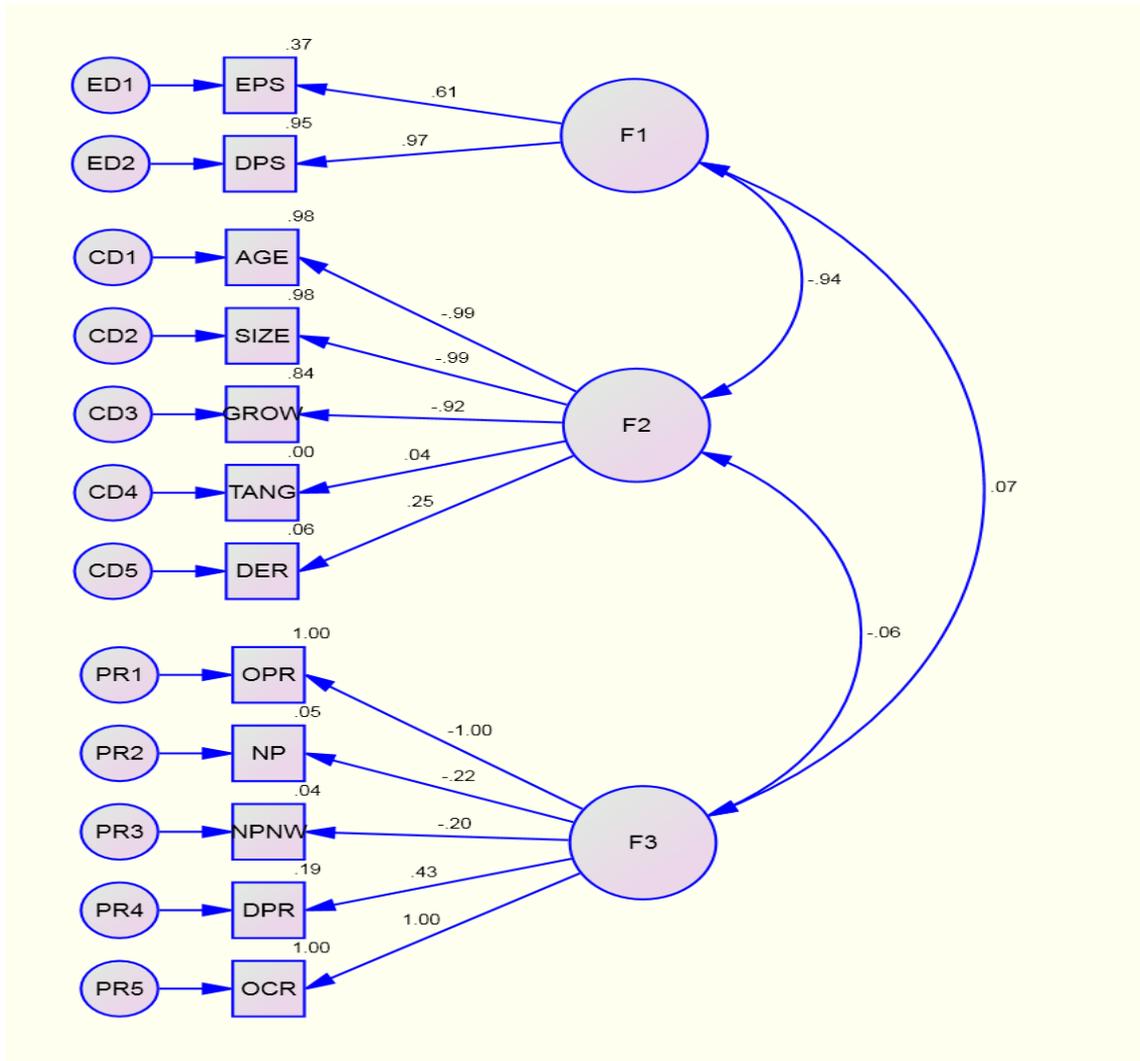
Companied included for representing the pharmaceutical industry

1. Sun Pharma
2. Cipla
3. Dr. Reddy's Laboratories
4. Lupin Limited
5. Cadila Healthcare
6. Divis Labs
7. GlaxoSmithKline Pharmaceuticals Ltd
8. Ipca Labs
9. Aurobindo

10.Ranbaxy:

DATA ANALYSIS AND DISCUSSION

AMOS graphically exhibits the Dividend Determinants of the pharmaceutical industry



Testing of Hypotheses

The following table depicts the results of the testing of the hypotheses.

Table 5.1 - Testing of Hypotheses

Hypotheses	Hypothetical Relationship	Result
H1 : There is a positive impact of EPS on dividend in the pharmaceutical industry.	Positive	Confirmed
H2 : There is a negative impact of DPS on dividend in the pharmaceutical industry.	Positive	Confirmed
H3 : There is a positive impact of AGE on dividend in the pharmaceutical industry.	Negative	Not Confirmed
H4 : There is a positive impact of SIZE on dividend in the pharmaceutical industry.	Negative	Not Confirmed
H5 : There is a positive impact of GROW on dividend in the pharmaceutical industry.	Negative	Not

pharmaceutical industry.		Confirmed
H6 : There is a positive impact of TANG on dividend in the pharmaceutical industry.	Positive	Confirmed
H7 : There is a positive impact of DER on dividend in the pharmaceutical industry.	Positive	Confirmed
H8 : There is a positive impact of OPR on dividend in the pharmaceutical industry.	Negative	Not Confirmed
H9 : There is a positive impact of NPR on dividend in the pharmaceutical industry.	Negative	Not Confirmed
H10 : There is a positive impact of NPNW on dividend in the pharmaceutical industry.	Negative	Not Confirmed
H11 : There is a positive impact of DPR on dividend in the pharmaceutical industry.	Positive	Confirmed
H12 : There is a positive impact of OCR on dividend in the pharmaceutical industry.	Positive	Confirmed

Chi-square =5752.9

Degrees of freedom = 78, Probability level = .000

Discussion of The Result

An analysis of path diagram reveals that dividend has positive relationship EPS, DPS, TANG, DER, DPR and OCR which is significant at 1 percent and 5 percent levels and negative relationship with AGE, SIZE, GROW, OPR, NPR and NPNW. The analysis of the model suggests that all the measured variables except AGE, SIZE, GROW, OPR, NPR and NPNW have an influence on the dividend policy of the select companies in the pharmaceutical industry

Regression Weights for Expectation of Dividend Determinants – The pharmaceutical industry

Table 5.2- Regression estimates

Latent Variable		Measured Variables	Estimates	SE	R ²	CR	P
F1(ED)	<---	EPS	6.679	.700	.61	9.547	***
F1(ED)	<---	DPS	16.809	2.163	.97	7.770	***
F2(CD)	<---	AGE	.495	.027	.99	18.162	***
F2(CD)	<---	SIZE	.138	.025	.99	29.219	***
F2(CD)	<---	GROW	-3.238	.089	.92	37.358	***
F2(CD)	<---	TANG	3.224	.072	.04	44.578	***
F2(CD)	<---	DER	36.500	1.041	.25	35.073	***
F3(PR)	<---	OPR	77.63	1.082	1.00	21.666	***
F3(PR)	<---	NPR	.415	.047	.22	8.797	***
F3(PR)	<---	NPNW	4.230	.261	.20	16.213	***
F3(PR)	<---	DPR	3.096	.181	.43	17.092	***
F3(PR)	<---	OCR	25.309	.972	1.00	26.043	***

***- Significant at 1% level

Structural Equation Model (using the package) AMOS graphically explains the relationship between the variables that have an influence on the determination of dividend. Dividend is determined by three important latent variables namely, Earnings and Dividend (ED), Capital Structure Determinants (CD) and Profitability of the Firm(PR).

Dividend Per share (DPS) has positive relationship with Earnings and Dividend by 16.81 and Earning per share also has a positive relationship with earnings and dividend by 6.68.

Debt equity ratio has the highest influence in determining capital-structure of the firm by 36.50 followed by Tangibility that influences by 3.22, “Existence-of-the-organization” influences by .50, Size of the firm influences by .138 and Sales growth has a negative impact on determining capital structure determinants of the firm by -3.238. The other variables like existence of the firm, size of the organization, sales growth, tangibility, and debt equity ratio have significance for determining capital structure of the firm at 1% level of significance.

Profitability of the firm is determined by operating profit ratio by 77.63 with 1% level of significance. Operating cost ratio is also a key variable for determining profitability of the firm by 25.31 followed by net profit to net worth influenced by 4.23, Dividend payout ratio is influenced by 3.10 and Net profit ratio also has lower level of influence in determine the profitability of the firm by .42. The other variables like operating profit ratio, net profit ratio, net profit to net worth, dividend per share and operating cost ratio have significance in determining the profitability of the firm at 1% of level of significance. The most critical ratios of all the manifest variables are mentioned in the above the table with a value of 2.962 that is significant at 1 percent level. Among the selected variables, twelve variables are the most influencing variables that determine the dividend policy of select companies in the pharmaceutical industry.

Model fit summary

Table 5.3 Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.72098990	.7178897	.84568798	.66768956	.96231234
Saturated model	1.00000000		1.00000000		1.00000000
Independence model	.00000000	.00000000	.00000000	.00000000	.00000000

NFI value is less than .88, which implies that this model is substantially improved good model. RFI- the rho1 value is 0.72. Hence it is inferred that it is a good fit. IFI- the value of delta2 is 0.84. Hence it is inferred that there is very good fit. TLI- the rho2 value 0.67 is close to the high range. This indicates very good fit. CFI is also close the value of 1. This indicates the very good fit for the model.

Table 5.4 RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.02989762	.01678560	.06278523	.00289783
Independence model	.08787656	.07876567	.09897876	.00098978

The above table shows that the RMSEA value is less than .05 which indicates the low level of approximation error in this model and the model’s close fit in relation to the degree of freedom. P close value has been used to test the hypothesis with the model and degree of freedom. Hence it can be inferred that this model achieves a significant fit in measuring the dividend determinants in the pharmaceutical industry.

FINDINGS OF THE STUDY

Trend analysis of The pharmaceutical industry for the period of 2000-2012

- The actual values of Net Sales in The pharmaceutical industry shows an increasing trend over almost all the years. The highest Net Sales was achieved in the year 2011 -2012 (4360.459) and the lowest in the year 2000-2001(824.116) and the difference between the actual values and the trend values of Net Sales is significant in The pharmaceutical industry.
- The actual values of the pharmaceutical industry’s Net Profit and its indices were fluctuating trend during the study period. The highest Net Profit was made in the year 2009-2010 (677.005) and the lowest in the

year 2000-2001(99.531) and the difference between the actual values and the trend values of Net Profit is significant in The pharmaceutical industry.

- In case of The pharmaceutical industry, the actual values of Net Worth and its indices showed fluctuating trend during the study period. The highest Net Worth was recorded in the year 2006-2007(29.915) and the lowest in the year 2004-2005(19.679) and the difference between the actual values and the trend values of Net Worth is not significant in The pharmaceutical industry.
- The actual values of Reserves and Surplus and its indices have been increasing over almost all the years. The highest Reserves and Surplus was recorded in the year 2011 -2012 (3760.39) and the lowest in the year 2000-2001(486.69) and the difference between the actual values and the trend values of Reserves and Surplus is significant in The pharmaceutical industry.
- ROCE and its indices exhibit fluctuating trend during the study period. The highest ROCE was recorded in the year 2002-2003 (30.935) and the lowest in the year 2004-2005(19.746) and the difference between the actual values and the trend values of ROCE is not significant in The pharmaceutical industry.
- DPR and its indices showed fluctuating trend during the study period. The highest DPR was recorded in the year 2004-2005 (44.388) and the lowest in the year 2011-2012(17.632) and the difference between the actual values and the trend values of DPR is not significant in The pharmaceutical industry.

Multiple regressions for The pharmaceutical industry

The analysis of variance of multiple regression models for DPS of the pharmaceutical industry indicates that the overall significance of the model is not that high . The co-efficient of determination R^2 value showed that these variables put together explained the variations of DPS to the extent of 95%.

Model prediction and fitness for measuring dividend determinants of the pharmaceutical industry

The critical ratios of all the manifest variables except OPR and OCR are above the table value 2.962 and significant at 1 percent level. Among the selected variables, ten variables are the most influential factors in determining the dividend policy of select companies in the pharmaceutical industry

CONTRIBUTION OF THE RESEARCH

Contribution to the conceptual framework

Structural Equation Model (AMOS) graphically explains the relationship between the variables influencing the determination of dividend. Dividends are determined by three important latent variables namely, Earnings and Dividend (ED), Capital Structure Determinants (CD) and Profitability of the Firm (PR). Thus, the research throws light on the most important factors that affect dividend policies in the pharmaceutical industry. The research can be extended to other industries to identify the determinants of dividends in these industries.

Contribution to the Financial Decision-making Process

Finance basically involves three major decision areas-investment decisions and dividend decisions. The outcome of the research will help the finance managers in dividend decisions. Companies that want to achieve a target payout ratio can use the models developed in this research to manage the important determinants that have been identified in the result and achieve the desired result.

Contribution to the Individual Investment Decision Process

An investor in shares would like to estimate the expected dividend per share before deciding to invest in a share. The multiple regression models developed in the research will enable an investor to estimate the dividend per share and make an appropriate decision.

Contribution to Valuation

Dividend discount model estimates the value of the shares of a company by discounting the estimated future dividends using an appropriate discount rate. The regression models developed in this research will help in the estimation of dividends and thus, the valuation of shares.

CONCLUSION

The trends and patterns of dividends and the major determinants that influence the dividend decisions are explored and studied for the pharmaceutical industry. The inter relationship between the determinants of dividend were identified and explored through applying multiple correlation analysis. The extent of relationship between the dependent and independent variables were identified and rediscovered by applying multiple regression analysis- a major multivariate tool. In the meanwhile, twelve hypotheses were tested to arrive at the tentative assumption in the formulation of the conceptual framework. ANOVA was applied to test the validity of dividend determinant variables for the pharmaceutical industry. The extent of risk connected to each determinant of dividend in the pharmaceutical industry was manifested by calculating Beta coefficients and finally to contribute to the philosophy of the subject a set of unique and exclusive Structural Equation models were presented for the pharmaceutical industry.

The results revealed from the Structural Equation Models applied to the pharmaceutical industry discovered that the following **mediating variables** like, Earnings Per Share, Debt-Equity Ratio, Sales Growth, Net Profit To Net worth Ratio, and Operating Profit Ratio as the vital determinants for dividend decisions.

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