Determinants of Dividend In Indian Pharmaceutical Industry – A Study Of Select Companies

**** Dr. D. Kamalaveni***
***** Dr. S.Kalaiselvi***
****** D.Sabitha***

"The Indian Pharmaceutical industry is a success story, providing employment for millions and ensuring that essential drugs at affordable prices are available to the vast population of this sub-continent".

– Richard Gerster

INTRODUCTION

Today, the Indian Pharmaceutical industry is in the front rank of India's science – based industries with wide ranging capabilities in the complex field of drug manufacturing and technology. As a highly organized sector, the Indian pharma industry is estimated to be worth $4.5 billion, growing at about 8 to 9 percent annually. It ranks very high in the third world, in terms of technology, quality and range of medicines manufactured.

Playing a key role in promoting and sustaining development in the vital field of medicines, the Indian pharma industry boasts of quality producers and many units have been approved by regulatory authorities in USA and UK. International companies associated with this sector have stimulated, assisted and have spear headed this dynamic development in the past 55 years and have helped to put India on the Pharmaceutical map of the world. The Pharmaceutical industry in India meets around 70% of the country's demand for bulk drugs, drugs intermediates, pharmaceutical formulations, chemicals, tablets, capsules, orals and injectibles. There are about 250 large units and about 8000 small scale units, and 5 central public sector units which form the core of the Pharmaceutical industry.

Indian pharma industry is made up of MNCs and Indian companies having market share of 38% and 62% respectively.

MAJOR PLAYERS

Indian companies face stiff competition from multinational corporation (MNCs). The major players and their market share are:

EXHIBIT 1: MARKET SHARE OF LEADING PLAYERS

Company	Share (%)	Company	Share (%)
Ranbaxy	7	Glaxo Smithkline	4
Cipla	4	Lupin	4
Dr.Reddy's Labs	4	Aurobindo Pharma	4
Sun Pharma	3	Aventis Pharma	2
Alembic	2	Knoll Pharma	2
Torrent	2	Morepan Labs	2
Wokhardt Life Sciences	2	IPCA Labs	2
Cadila Healthcare	2	Dabur	2
Orchid	2	Nicholas Piramal	2
Novartis India	2	Pfizer	1.5
Wyeth Lederlee	1	Rhone – Poulene	1
E Merek (India)	1	Parke Davis	1
Other including SSI	40.5		

Source: Market Forecast and Indicators; Emerging Market in India 2002-2012 by Dr.S.R.Mohnot.

PERFORMANCE OF THE PHARMA SECTOR

Under the regime of economic liberalization under way since early 1990s, the drugs and pharmaceutical sector witnessed initiatives at fresh investment in the sector. Nearly 1700 investment proposals of the order of around

* *Reader In Commerce*, Vellalar College for women, Erode-12, Tamil Nadu. Email: kamal.mohanan@yahoo.co.in
** *Lecturer in Commerce (Finance & Control)*, Vellalar College for Women, Erode-12, Tamil Nadu. E-Mail id:cutekalai_2003@yahoo.co.in
*** *Lecturer in Commerce*, Vellalar College for Women, Erode-12,Tamil Nadu

Rs.150 bn were initiated. The foreign collaboration proposals approved numbered around 420 with a Foreign Direct Investment (FDI) component of Rs.25 bn. The sector is estimated to have registered a growth of 20% at around Rs.70 bn. The Export Import Bank of India (EXIM BANK) has doubled its corpus for the Pharmaceutical Industry to Rs.2 bn as a result of increased activity. The global Pharmaceutical industry is estimated at $300 bn and India's measly share of $1.5 bn in global trade represents an untapped potential.

DOMESTIC AND EXTERNAL TRADE

More than 85% of the formulations produced in the country are sold in the domestic market. India is largely self-sufficient in case of formulations. Overall, the size of the domestic formulations market is around Rs.160 bn and it is growing at 10% p.a.

Over 60% of India's bulk drug production is exported and the balance is sold locally to other formulators. India's Pharmaceutical exports are to the tune of Rs.87 bn, of which, formulations contribute to nearly 55% and the rest 45% comes from bulk drugs.

EXHIBIT 2: CONSUMPTION AND EXPORT

(Rs. in Crores)

Year	Domestic Consumption	Export
1999 – 2000	22086.1	7230.2
2000 – 2001	23304.3	8757.2
2001 – 2002	24191.9	9834.7
2002 – 2003	24039.1	12826.1
2003 – 2004	23744.8	15213.2
2004 – 2005	23370.3	16681.1
ACGR	**1.14%**	**18.20%**

Source: CMIE Report, February 2006.

FUTURE PROSPECTS

As per WTO, from the year 2005, India has granted product patent recognition to all new chemical entities (NCEs) i.e. bulk drugs developed then onwards. The Indian government has decided to allow 100% Foreign Direct Investment, which is expected to aid the growth of contract research in the country.

According to a study by Mckinsey, Vision 2010, the domestic Pharmaceutical industry could attain a size of $25 bn (Rs/1200 bn) by 2010 by focusing on two areas:

a. Innovation – led research development and new drug discoveries and

b. Information – led remote sales and marketing. The sector was estimated to be worth $ 5.5 bn by Mckinsey then.

'Dividend' generally denotes the return that a shareholder gets from the company, out of its profits on his shareholdings. Dividends are paid in the form of i) Cash dividend ii) Bond dividend iii) Property dividend and iv) Stock dividend. In India, payment of dividend is in the form of cash or stock or combinations of both are in practice.

Equity shares act as an attractive medium of investment for the investors. Investors other than speculative investors prefer a periodic return from the investment made by them. Dividend is one of the major considerations among the investors while choosing the company for investment. Investors prefer to invest in the companies which are profitable and are paying regular dividends.

Dividend policy of a company is affected by various factors such as general state of economy, state of capital market, legal restrictions, contractual restrictions, tax policy, desire of the shareholders, financial needs of the company, nature of earnings, desire of control and liquidity position. Cash dividends are viewed as a signal to investors.

PREVIOUS STUDIES-SOME HIGHLIGHTS

The present study is based on the empirical studies already undertaken on "divided determinants".

The research study of Lintner John (1956) establishing the relationship of previous year dividend and current year earnings with current year's dividend was a pioneering work on determinants of dividend. In the next year (1957), Darling introduced two more variables namely, depreciation and change in volume of sales. In 1963,

Smith added one more variable called 'demand for investment' to the Lintner's model. In 1971, Krishnamurthy and Sastry examined the dividend behaviour of the chemical industry and they concluded that Lintner's model was more appropriate in explaining the dividend behavior of the chemical industry.

Agarwal carried out a study in 1986 to examine the dividend behavior of the automobile industry. He added four more variables- namely change in sales, liquidity, flow of external funds and total investment to the basic Lintner model. He concluded that current year profit is the most important factor in determining the payment of dividend. In 1994, Bhat, Ramesh and Pandey had undertaken a study and they ranked the determinants of dividend as i) current earnings ii) Patterns of past dividend iii) increase in equity base and expected future earnings iv) liquidity and v) preference of companies to maintain their dividend policy.

In 2001, H.Kent Baker, E.Theodore Veit and Gary E.Powell analysed the "Factors influencing Dividend Policy Decisions of Nasdaq firms". The result suggests that many managers of Nasdaq firms make dividend decisions consistent with Lintner's survey results and model. "Disappearing Dividends in Emerging markets- Evidence from India" was published by Reddy Y.Subha, Rath, Subhrendu in 2005. The result of the study shows that the percentage of companies paying dividends declined from over 57% in 1991 to 32% in 2001, and that only a few firms paid regular dividends.

SAMPLE SELECTION AND STUDY PERIOD

CMIE data base (Jan 2006) contained data of 239 companies (both Indian and MNCs) operating in India. The researcher selected the **listed Indian Companies** which fulfill the following conditions: i) earned profits consistently during the study period of 10 years from 1995-96 to 2004-05. ii) Did not loose their original identity by mergers / amalgamations. Thus, 14 Indian listed companies were selected for the study.

OBJECTIVES OF THE STUDY

The study has been undertaken with the following objectives:

1. To analyze the profitability and dividend performance of the sample companies.
2. To identify the determinants of dividend.
3. To find out the degree of relationship between market capitalization and EPS of each of the sample companies.
4. To group the sample companies on the basis of profit and to test the significance of relationship in respect of i) dividend pay-out percentage and ii) annualized dividend percentage among the groups.

ANALYTICAL TOOLS

In order to measure growth, Annual Compound Growth Rates have been computed. Simple correlation and multiple regression techniques are used to determine the factors influencing dividend. ANOVA was used to test the significance of relationship in respect of i) dividend pay-out percentage and ii) annualized dividend percentage.

ANALYSIS AND DISCUSSION

A. GROWTH ANALYSIS

The growth of dividend per share (DPS), earnings per share (EPS) and the profitability of the companies are analyzed by computing Annual Compound Growth Rate (ACGR) – Table 1.

Table-1: Annual Compound Growth Rates of PBIT, PAT, EPS and DPS (%)

Company	PBIT	PAT	EPS	DPS
Dr.Reddy's Laboratories	-0.06	3.00	-9.32	5.84
Sun Pharmaceutical Industries	26.95	26.45	-4.87	4.61
Glenmark Pharmaceuticals	36.62	39.56	-14.44	-11.01
Cipla Ltd.	28.60	34.23	-1.06	12.42
Neuland Labs	6.10	5.79	-1.25	-7.83
Zandu Pharmaceutical Works Ltd.	9.54	11.95	4.28	5.80
Unichem Laboratories	22.15	26.17	-2.14	-3.89
Nicholas Piramal India Ltd.	20.90	20.92	-8.00	-0.89
JB Chemicals and Pharmaceuticals	16.31	18.54	5.81	14.67
IPCA Laboratories	18.31	20.52	11.30	8.23
Aurobindo Pharma	24.58	19.37	-8.43	-16.37
FDC Ltd.	18.19	22.15	-14.46	-11.18
Orchid Chemicals and Pharmaceuticals Ltd.	16.87	6.65	-1.76	5.69
DIL Ltd.	-18.54	-18.60	-18.76	3.04

The ACGR of PBIT of all the companies except Dr.Reddy's Laboratories and DIL show a positive growth rate. Except DIL, all other companies show a positive growth rate in respect of PAT. Majority of the companies reveal a negative growth in EPS. Only 8 companies depict a positive growth in DPS. The year 2004-2005 had been distinctly bad (financially) for seven companies as revealed by sudden fall in PAT and was not so good for three sample companies as revealed by a meager surge in PAT.

B. DETERMINANTS OF DIVIDEND

The dividend policy of a company is affected by both internal and external factors. In order to determine the extent to which dividend paid in the current year is influenced by the internal factors, the following variables were taken as 'independent variables': i) Current year sales (X_1) ii) Current year interest (X_2) iii) Current year depreciation (X_3) iv) Current year provision for tax (X_4) v) Current year net profit (X_5) vi) Previous year net profit (X_6) vii) Previous year dividend per share (X_7) viii) Previous year retained earnings per share (X_8) and ix) Current year liquidity ratio (x_9). Dividend per share of the Current year (Y) was taken as the 'dependent variable'. The following null hypothesis has been framed and tested:

"Variations in current year sales, current year interest, current year depreciation, current year provision for tax, current year net profit, previous year net profit, previous year dividend per share, previous year retained earnings per share and current year liquidity ratio do not cause significant variation in dividend per share of the current year".

Simple correlation analysis has been made in order to determine the degree of relationship between the dependent variable and each of the explanatory variables. The results of the correlation analysis are presented in the Table 2.From the correlation analysis, it is found that in eight companies, the explanatory variables taken in the study do not have any significant relationship with the dependent variable.

Table 2 : Correlation Coefficients of Independent Variables (X) with Dependent Variable (Y)

Companies	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
Dr.Reddy's Laboratories	.834 **	-.093	.664	-.068	.861**	.511	.496	.782*	.756*
Sun Pharmaceutical Industries	-.275	-.131	-.238	-***	-.377	-.312	-.340	.218	-.380
Glenmark Pharmaceuticals	-.523	-.364	-.440	-.316	-.544	-.588	.127	.023	-.287
Cipla Ltd.	.416	.235	.338	.714*	.333	.429	.204	.029	-.019
Neuland Labs	-.580	.027	-.585	-.350	-.339	.167	.652	.229	.643
Zandu Pharmaceutical Works Ltd.	.630	-.862 **	-.322	.924**	.878 **	.841**	.856 **	.789*	.662
Unichem Laboratories	-.348	.202	-.365	.518	-.344	-.236	.126	.175	.161
Nicholas Piramal India Ltd.	.421	.149	.148	-***	.380	-.022	-.015	-.174	.231
JB Chemicals & Pharmaceuticals	.966 **	-.477	.964**	-.327	.965 **	.898**	.885 **	-.073	.238
IPCA Laboratories	.623	-.822 **	.473	.718*	.741*	.495	.479	.177	-.058
Aurobindo Pharma	-.555	-.443	-.780*	.322	-.056	-.734*	.216	.175	-.454
FDC Ltd	-.507	-.190	-.403	-***	-.460	-.434	.180	.192	.207
Orchid Chemicals &Pharmaceuticals Ltd.	.078	-.144	.053	.189	-.227	-.027	-.279	-.256	-.602
DIL Ltd.	.008	-.378	.321	.489	.508	-.507	.215	-.507	-.405

* -Significant at 5% level ** -significant at 1% level ***-The companies have not created provision for tax during the study period. So correlation with current year DPS is not computed

So the multiple regression does not fit for the following companies: i) Sun Pharmaceutical Industries ii) Glenmark Pharmaceuticals iii) Neuland Labs iv) Unichem Laboratories v) Nicholas Piramal India Ltd. vi) FDC Ltd. vii) Orchid Chemicals & Pharmaceuticals Ltd. viii) DIL Ltd.

Only in six companies, some of the explanatory variables have a significant relationship with current year DPS at 5% and 1% level.

Hence, step wise multiple regression analysis was carried out for the 6 companies (Table 3). The following regression model is fitted for performance:

$$Y= b_0+b_1X_1+b_2X_2+b_3X_3.....+b_nX_n$$

In Dr.Reddy's Laboratories, current year net profit(X_5) has a positive and significant relationship with current year DPS and explains the variations to the extent of 74.1%. In Cipla Ltd., current year provision for tax (X_4) has a significant and positive relationship and explains the variations in the current year DPS to the extent of 51%. In Zandu Pharmaceutical Works Ltd., current year provision for tax(X_4) has a positive relationship with the dependent variable and explains the variations to the extent of 85.4%. In JB Chemicals and Pharmaceuticals, current year sales (X_1) have a positive relationship and explains the variations is current year DPS to the extent of 93.4%.

Current year interest (X_2) has a negative relationship and affects the current year DPS of IPCA Laboratories to the extent of 67.6%. Current year depreciation (X_3) of Aurobindo Pharma has a negative relationship, and affected the current year DPS to the extent of 60.8%.

Regression model of the six companies put together reveals that current year provision for tax (X_4) has a positive relationship and current year liquidity ratio (X_9) has a negative relationship with the current year DPS. These two explanatory variables explain the variations in current year DPS to the extent of 98.4%.

C. DIVIDEND PERFORMANCE - A COMPARISON BETWEEN GROUPED SAMPLE COMPANIES.

The companies are classified into above average profit companies and below average profit companies based on the general average of mean profit of each company. Above average profit companies are: i) Dr.Reddy's Laboratories ii) Sun Pharmaceutical Industries iii) Cipla Ltd. iv) Nicholas Piramal India Ltd. Below average profit companies are: i) Glenmark Pharmaceuticals ii) Neuland Labs iii) Zandu Pharmaceutical Works Ltd. iv) Unichem Laboratories v) JB Chemicals and Pharmaceuticals vi) IPCA Laboratories vii) Aurobindo Pharma viii) FDC Ltd. ix) Orchid Chemicals and pharamaceuticals Ltd. x) DIL Ltd.

The following hypotheses have been set and tested by using ANOVA.

1. **"There is no significant difference in average dividend pay-out percentage between above average profit companies and below average profit companies." (Table 4)**
2. **"There is no significant difference in average annualized dividend percentage between above average profit companies and below average profit companies." (Table 5)**

Table 3 : Estimated Regression Model

Companies	Regression Model	R^2
Dr.Reddy's Laboratories	$Y=2.916+7.964E-03X_5$	.741
Cipla Ltd.	$Y=-1.292+6.171E-02X_4$	.510
Zandu Pharmaceutical Works Ltd.	$Y=33.625+1.755X_4$	.854
JB Chemicals & Pharmaceuticals	$Y=-2.702+4.127E-02X_1$	.934
IPCA Laboratories	$Y=12.706 -.494X_2$	.676
Aurobindo pharma	$Y=4.401-7.6328 E-02X_3$	.608
Average of six firms	$Y=10.995+.310X_4-2.914X_9$	.984

Table 4 : ANOVA for Average Dividend Pay-Out Percentage

Source	DF	SS	MS	F
Between groups	1	26.675	26.675	
Within groups	12	1470.215	122.518	.218ns*

* - Not Significant

Table 5 : ANOVA for Average Annualized Dividend Percentage

Source	DF	SS	MS	F
Between groups	1	2018.181	2018.181	
Within groups	12	3369.901	280.825	7.187**

** - Significant at 1% level

ANOVA results indicate that there is no significant difference in the average dividend pay-out percentage made by the above average profit companies and below average profit companies; but there is a significant difference in average annualized dividend percentage of these two groups of companies.

D.EFFECT OF EPS ON MARKET CAPITALIZATION

The degree of relationship between the EPS and Market Capitalization is found out by correlation analysis.

The following hypothesis has been set and tested:

"**There is no strong positive correlation between market capitalization and earnings per share**." In respect of nine companies, there is a negative relationship between market capitalization and EPS. However, it cannot be construed that market capitalization and EPS have negative relationship; it could be inferred that EPS has no strong positive influence on market capitalization and market capitalization could have been influenced by some factors other than EPS.

CONCLUSION

India, being the fourth largest economy in the world – by GDP in terms of Purchasing Power Parity (PPP) and with population exceeding one billion, certainly offers a colossal market potential for pharma industry. But the future of the industry will be determined by how well it markets its products to several regions and distributes risks, forward and backward integration capabilities, R & D, consolidation through mergers and acquisitions, co-marketing and licensing agreements.

Indian Pharmaceutical industry has grown manifold from its inception. Hypotheses which have been formulated (by the earlier researchers on dividend policy) and tested in different countries and in different industries have been tested by the researcher on the Indian Pharmaceutical companies in the present study. The study reveals that there is growth in profits of majority of sample companies and only eight companies show a growth in their DPS. The multiple regression analysis reveals that only in respect of six companies, one or more of the independent variables taken in the study show a significant relationship with current year dividend. The EPS of sample companies does not have a strong positive influence on their market capitalization leading to the conclusion that market capitalization is not dependent on the earnings of the company alone.

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