

THE CORPORATE GROWTH DETERMINANTS WITH REFERENCE TO CIPLA PHARMACEUTICAL COMPANY

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ABSTRACT

The Corporate Growth is, one of the prime areas of desirability for many researchers in the area of finance. Growth has an important measurement of the firm. There is also a variety of different types or modes of growth. It can be achieved through increasing the volume of current activities, vertical integration and/or related or unrelated diversification. Through growth, the firm will be able to expand its size. In this paper, an attempt is made to identify the determinants of growth in terms of net sales in Cipla pharmaceutical company. This study covers a period of ten years, i.e., from 2002-03 to 2011-12. In order to study the growth, there are four important variables, viz., market situation, core resources, R&D and investment), which was chosen for empirical investigation. For this, statistical tools like correlation and multiple regressions are used. The technique of correlation is used to know the relationship among the variables. It shows that the R&D and Investments are positively significant with Growth (Net Sales). And the relationship between Market situation and Core Resources are negatively significant. Whereas the relation between Investment and R&D is positively significant. A multiple regression analysis is used to develop a model to identify the determinants of growth of the firm in this industry. The result revealed that, only R&D has statistically significant in determining the growth of Cipla pharmaceutical company Limited.

Growth has a significant dimension of the firm though the company is small or big. A sound balance of the main strategic concepts is required to reach growth in a company, and they are never isolated one from the other. Nehru (1953) once remarked, "Real progress must ultimately depend on industrialization". From the change-in-amount perspective growth can be measured with a range of different indicators, the most frequently suggested being sales, employment, assets, physical output, market share and profits (Ardishvili et al., 1998; Delmar, 1997; Weinzimmer, Nystrom & Freeman, 1998; Wiklund, 1998). Chandler, McKelvie and Davidsson (2005) successfully used transaction cost theory to explain when growth in sales and employment do and do not move closely together. Firms can grow at different rate and with different regularity. Any strategic decision implies a setting of the volume growth, returns, risk and the hope in the business. At the same time, volume growth is mainly affected by the demand, decisions in sales, targeted profit, cash flows, etc. In this context, sales is a dependent variable supported by underlying business processes as most of the companies are more oriented to sales than operations.

COMPANY PROFILE: AN OVERVIEW

Cipla Limited is a pharmaceutical company. Cipla Ltd was incorporated in the year 1935 with the name Chemical, Industrial & Pharmaceutical Laboratories Ltd. The company focuses on development of new formulations and has a wide range of pharmaceutical products. Khwaja Abdul Hamied, the founder of Cipla gave the company all his patent and proprietary formulas for several drugs and medicines, without charging any royalty. On August 17, 1935, Cipla was registered as a public limited company with an authorized capital of Rs 6 lakh. It offers prescription drugs, bulk drugs, animal products and pesticides. In May 2010, the company acquired 100% shareholding of a company for Rs 51.38 crore. This company has a state-of-the-art formulations manufacturing facility at Sikkim with capabilities to manufacture tablets, capsules, oral liquids, injections, dry syrup and ointments/creams. During the year 2010-11, the company introduced a number of new drugs and formulations, such as Entavir (entecavir tablets), an antiviral for hepatitis B; Febucip (febuxostat tablets), a drug for gout; Flosift (fluorometholone acetate ophthalmic suspension), a topical steroid for eye inflammation; Foracort (formoterol and budesonide autohaler), an asthma controller therapy in a new easy-to-use breath actuated inhaler; Furamist AZ (fluticasone furoate and azelastine hydrochloride nasal spray), a nasal spray for allergic rhinitis, and Montair FX (montelukast and fexofenadine tablets), an antiallergic combination for rhinitis. The company is setting up API facilities at Bengaluru and Kurkumbh. They are also upgrading the API facilities at Patalganga. The total investment for these projects is about Rs 400 crore. The company proposes to subscribe to the share capital of two biotechnology companies, located in India and Hong Kong, to obtain a 40 per cent and a 25 per cent share, respectively. The total investment will be about USD 65 million, in a phased manner, for setting up state-of-the-art facilities for biosimilar products in Goa and China.

STATEMENT OF THE PROBLEM:

The primary objective of a business is to achieve profit, which can be possible through various factors like mergers, expansion, integration, diversification and growth etc., however, today's business aims for value addition towards equity shareholders. If the profit of a firm increases, then the growth and value of shareholders also increases. To achieve its objective, a firm should take appropriate financial decisions-which can be done through determinants of growth (net sales). The Pharmacy industry in India is playing a vital role in the healthcare area of the nation. At the time of independence, the drugs and pharmaceutical industry was in an infant stage with a merge investment of Rs.10 corers. Most of the bulk drugs and formulations were imported from the developed countries. In line with the objectives of the successive Five year Plans of the Government of India , public sector undertakings (PSU) like Indian Drugs and pharmaceutical Ltd., (IDPL) & Hindustan Antibiotics. With the implementation of product patents from the year 2005, there will be a tough competition for the global market share. The Pharmacy companies will have to focus more intensively on R&D activities to survive the competition. Hence, the present study identifies the determinants of the growth (net sales) like market situation, core resources, R&D and investment in Cipla pharmaceutical company as it plays vital role.

OBJECTIVES OF THE STUDY:

Against to this background, the following are the specific objectives of the study:

- (i) To find out the select growth determinants (NS, MS, CR, R&D, Investment).
- (ii) To analyse the association between the variables.
- (iii) To know the determining factors of growth of the Cipla pharmaceutical company by using regression model.

HYPOTHESIS OF THE STUDY:

On the basis of the theoretical framework and review of literature, the following hypotheses were developed.

H₁: The R&D has the positive relation with the growth (net sales).

H₂: The Investment has the positive relation with the growth (net sales).

RESEARCH METHODOLOGY:

The research methodology is the science of dealing with the principles of procedure in research study. It deals with the definition of the research problem, research design, and method of data collection, selection of sampling, statistical tools employed and interpretation of collected data.

(i) Research Design:

The design of the present study is descriptive in nature and conducted empirical analysis.

(ii) Scope of the Study:

Irrespective of company's scale, whether it is small or big, growth has been a significant measurement of the firm. Hence, the present study focuses on analyzing the factors influencing the growth, as it is useful for taking decisions, like financing and investment to maximize the earnings.

(iii) Period of Study:

The study of this type requires at least a decade period to observe the trend and draw valid conclusions from the analysis. Now, the present study covers a period of 10 years starting from 2002-2003 to 2011-2012.

(iv) Sources of Data: In the present analysis, the secondary data were used, which are collected from the Capital line and Prowess Database.

(vi) Statistical Techniques: The statistical techniques such as correlation, regression analysis are computed with the help of SPSS Software package.

(vii) Variables selected: The study examines the determinants of the growth (Net Sales) of the Indian Pharmaceutical Industry. The determinants considered for the analysis include growth in sales, market situation, core resources, R&D and investment. In the present study, to examine the various factors that affect the growth (Net Sales) of the companies in India growth (Net Sales) as a dependent variable and the remaining variables were considered as the independent variables.

(viii) Definition of variables: The definition of variables where the notation in lower case letters indicates that a variable has been transformed into a natural logarithm or ratios which are as under:

Net Sales (NS) = $\ln(\text{Sales})$. Year end net sales adjusted with the PPI-Producer Price Indexes specific for every sector and supplied by the US Bureau of Labour Statistics.

$$\text{Net Sales} = \text{NS} = \ln [y_1 * 100 / p_2] \quad y_1 = \text{Net Sales.}$$

p_2 = PPI-Producer Price Index for pharmaceutical preparation manufacturing sector

Market Situation (MS) = $\ln(\text{real GDP})$. The real gross domestic product supplied by the Bureau of Economic Analysis.

$$\text{Market Situation} = \text{MS} = \ln(\text{real GDP}), \quad \text{Real GDP} = \text{Gross Domestic Product}$$

Core Resources (CR) = Selling general and administration expenditures to sales ratio. And Sales adjusted by the PPI-Producer Price Indexes specific for every sector. This Variable wants to capture the “core competences”, which is a term first introduced and defined by Prahalad and Hamel in the strategic management literature. Core competences relate to the current resources, processes and skills providing competitive advantage to the company.

$$\text{Core Resources} = \text{CR} = \text{SG\&A/Sales} = x_3 * 100 / p_1 * p_2 / y_1 * 100 = x_3 * p_2 / p_1 * y_1$$

$$x_3 = \text{Selling General and Administration expenditures} \quad p_1 = \text{Annual GDP}$$

Research & Development (RD) = $\ln(\text{Stock of R\&D capital})$. The method of construction of the stock of R&D capital was initially built by Griliches (1981), Griliches and Mairesse (1981), and Griliches and Hall (1982). It is a standard perpetual inventory with a depreciation rate of 15%.

Investment (I) = Investment to sales ratio. The annual total investments have been adjusted to by the GDP deflator for fixed non-residential investment supplied by the Bureau of Economic Analysis and Sales adjusted by the PPI-Producer Price Indexes specific for every sector.

$$\text{Investment to Net Sales ratio} = \text{Investment/ Sales} = x_8 * 100 / p_1 * p_2 / y_1 * 100 = x_8 * p_2 / p_1 * y_1$$

$$\text{Investment} \quad \text{it} = x_8 = \text{AT}_{it} + \text{DP}_{it} - \text{AT}_{i,t-1}$$

AT = Assets Total.

DP = Annual Depreciation and Amortization.

REVIEW OF LITERATURE:

The empirical studies in India as well as abroad are reviewed to find out the research gap, it is relevant to present the available literature on the related aspects of the present study.

Parker (1964) found that only tow companies appeared to decline in productive capacity over the period and decline was associated with negative profit rates. If a strong

correlation existed between growth and profitability, then the companies which grow at the aster rate would be the most profitable and it was observed that such a relationship existed.

Morris (1967) argued that the variations between firm's growth rates were due to the efficiency of the firms. It was opined that the data brought out distinction between efficient firms and less efficient firms and the former exhibited high growth rates and higher profit rates.

The debt overhang concept by Myers (1977) demonstrates that the high leverage may cause companies to under invest since the benefits of additional capital investments accrue largely to debt holders instead of equity holders. This is likely to lead to a slow growth. At the same time, the over investment problem outlined by Jensen (1986) that the managers may wish to expand the scale of companies, even if it is invested in poorly performing projects, the debt limits the free resources available for such investments. This would result in a negative relationship between leverage and investment growth for companies that have less opportunities.

Orr (1974) found that firms were attracted by high profit rates and growth in the industry, but deterred by entry barriers like absolute capital requirement, advertising/sales ratio, research and development/sales ratio ,profit risk (measured by standard deviation of profit rates) and concentration.

Kumar. P (1985), in his study on "Corporate growth and profitability in the larger Indian Companies" has examined the relationship between profitability and growth in 83 Indian large companies during 1969-79. The study revealed a significant inter study. The very low value of R^2 in all the cases shows that only a small fraction of the growth of firms in Indian corporate sector has been explained by profitability.

Gupta (1985) attempted to test the Gibrat's law in the Indian context. The average compound growth rate of capital employed for period 1968-71 was taken as the indicator of growth of firm's size by considering the four industries during the 1968-71. The significant differences between average growth rates in different size classes and also since inn most cases the standard deviation of growth rates was homogeneous for different size classes. Thus the growth process during the period did not warrant the rejection of Gibrat's law.

Chauvin and Hirschey (1997), in a paper "Market structure and the value growth" found statistically significant positive effects of growth on the current market value of the firm. The study investigated market share, advertising and research & development expenditures as attributes of market structure with the potential to influence the effects of growth on the current market value of the firm. The cross-sectional relation between the market value of the firm and company characteristics was found to be dependent upon market conditions.

Geroski (1999), together with Machin and Walters (1997) studied the growth and profitability and concluded that the firm size follows a random walk, corporate growth is history dependent and every firm seems to have its own history. They described the theories of corporate growth and the implications in the growth models for every theory. A very important conclusion in this study is that the finding of irregular and erratic innovation by the majority of the firms, and the existence of a threshold to get signs of learning or increasing returns to the innovative activity. The results of this joint work explained that the unpredictability of corporate growth is due to the unpredictability of future shocks and the changes in the market value of firms.

Cox, Camp and Ensley (2002) surveyed 672 members of the Entrepreneur of the Year Institute and found a positive relationship between sales growth rate and profitability growth.

Berry(2004) "The Pharmaceutical Regulatory Process(Drugs and the Pharmaceutical sciences 144), provides an in depth coverage of the procedures utilized by pharmaceutical companies for regulatory compliance, it describes the history and development of regulations, standards, and guidelines that affect pharmaceutical product approval and commercial sale in the United States standing alone as the only authoritative guide to address the complex web of regulatory requirements, application processes, and quality control issues influencing the pharmaceutical industry.

Niskanen, Mervi and Niskanen Jyrki (2005), "The Determinants of Firms growth in small and Micro Firms. Evidence on relationship lending Effects". This study has done between 1994 and 1997 with objective of examining the determinants of growth of small and micro firms with sample size of 100 Finland firms.

S. Chandrakumarmangalam and P. Govindasamy (2010) have found in their study on the "Leverage - An analysis and its Impact on profitability with reference to selected cement companies in India", that the leverage and profitability and growth are related and the leverage is having an impact on the profitability of the firm.

. Most of the studies have identified a positive impact of leverage on sales growth (e.g. Heshmati 2001, Honjo and Harada 2006, Hermelo and Vassolo 2007 and Huynh and Petrunia 2010).The autoregressive dynamic models were used in the Geroski, Machin and Walters' research and when regressing of the growth rate of the firm by previous growth rates and changes in current expectations of future profitability.

Now, the present study differs in two main aspects when compared with the above reviewed research. Firstly, it differs in the specification of the econometric models; secondly the variables used in the study. The above said studies are mainly based on the static Cobb-Douglas production function, where the production output is a function of labour, capital and knowledge or R&D capital as specifically applied by Hall and Mairesse. In this analysis, it is based on NS, MS, CR, R&D and Investment with mean standard deviation. Thus, it gives a clear idea about the consistency and variance of above referred variables of the selected companies. And also multiple regressions have also run among the dependent and independent variables by using SPSS, which shows the significant results.

ANALYSIS AND INTERPRETATION:

Analysis of data: The data were analyzed by using descriptive statistics, matrix. The regression line fitted, taking sales growth as a dependent variable and other variables, like MS, CR, R&D and I were taken as independent variables.

Descriptive statistics: It gives a numerical and graphical procedure to summarize the data in an understandable manner. In this study, the descriptive statistics of mean, median, standard deviation, minimum and maximum were used.

Table 1: Financial variables of the selected companies during the period 2002-03 to 2011-12

Variables	Obs.	Mean	S.D	Minimum	Maximum
Net Sales	10	6.57	.41	5.97	7.08
Market situation	10	1.99	.35	1.36	2.28
Core Resources	10	8.45	4.73	4.93	20.01
Research &Development	10	4.92	.490	4.09	5.64
Investment	10	21.40	25.39	2.59	89.65

Source: Annual reports of the selected companies

Table-1 provides a summary of descriptive statistics of the dependent and independent variables. The mean of net sales of the company as 6.57. This means that more than 65% of the company's growth depends on the net sales. The market situation was measured by natural logarithm of GDP, which had a mean value of 1.99. The core resources (selling and general expenditures to sales ratio) mean value is 8.45, which implies that the Cipla had core competences related to the current resources, processes and skills providing competition which are advantageous to the company. The mean value of R&D value is 4.92, which indicates 49% of the money spending on R&D for the growth of the business. Further, the mean value of investment is 21.40, which tells that there are higher investments in the company.

CORRELATION MATRIX

It is mathematical tool that is used to describe the degree to which one variable is linearly related to the other, in other words it is measuring the degree of association of the two variables. Table-2 shows the correlation matrix between dependent and explanatory variables. The results show that and R&D is positively correlated with growth (net sales), which is significant at 1% level. This implies that the high competences in R&D companies tend to have higher growth. Investment is positively correlated with growth, which is significant at 5% level. Among independent variables, the correlation between MS and CR is negative association at .004 and correlation between R&D and Investment is positively associated at .021.

Table 2: Correlation Matrix between the various selected variable of the selected companies

Variables		NS	MS	CR	R&D	I
Net Sales	Pearson correlation	1				
	Sig (2-tailed)					
Market situation	Pearson correlation	.231	1			
	Sig (2-tailed)	.522				
Core Resources	Pearson correlation	.314	-.817**	1		
	Sig (2-tailed)	.376	.004			
Research & Development	Pearson correlation	.977**	.298	.255	1	
	Sig (2-tailed)	.000	.402	.478		
Investment	Pearson correlation	.663*	-.067	.332	.711*	1
	Sig (2-tailed)	.036	.854	.349	.021	

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

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

Source: Computed from the collected data

REGRESSION MODEL SPECIFICATIONS

The present study examines the determinants of growth (net sales) of the pharmaceutical industry by using multiple regression models. All the selected four explanatory variables are included in the regression analysis. The model is represented as under:

$$sit = \alpha si,t-1 + \beta1 git + \beta2 eit + \beta3 rit + \beta4 iit + \eta i + \epsilon it$$

The variables are for clarification given below:

Sales = sit = ln(Net Sales) = Natural logarithm of net sales

Market Situation = git = ln(real GDP) = Natural logarithm of real GDP

Resources = eit = Selling General & Administration expenditures to Sales ratio

Research & Development = rit = ln(Stock of R&D Capital)

Investments = iit = Investment to Sales ratio

Intercept = ηi , Residuals = ϵit

Due to the fact that the dependent variable, sales and the explanatory ones (like the market situation and the research and development) are in logs, the related coefficients will be in elasticity. This means that a 1% change in the stock of R&D capital will impact $\beta3$ % in the change in sales.

Table 3: Regression results of the selected variables

Variables	Beta(β)	Std. Error	T	P values
(constant)	2.456	.428	5.732	.002
MS	-.678	.667	-1.016	.356
CR	-.038	.045	-.844	.437
R&D	1.194	.360	3.316	.021
I	-.004	.003	-1.280	.257

Source: Computed from the collected data

Table-3 presents the regression results of explanatory variables. It is clear from the data that the R&D results shows positive relationship with growth as the p-value is .021. Further, the market situation, core recourses and investment have a negative relationship with growth (Net sales) but not significant as the p- value shows .356 and .437 and .257.

Table-4: Anova Test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.426	4	.356	40.004	.001*
Residual	.045	5	.009		
Total	1.470	9			

Source: Computed from the collected data

The F-Statistics giving p value as .011, which explains that the regression model is highly significant.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.985 ^a	.970	.945	.09439

Source: Computed from the collected data

Table-5 presents the value of R Square, which is equal to .970, which suggests that 97% of the variation in the growth (net sales) has been explained by the explanatory variables, such as MS, CR, R&D and Investment.

FINDINGS OF THE STUDY:

- From the analysis, it is found that the growth (net sales) had high mean value of 6.57%, which speaks that the mean values of Cipla pharmaceutical company are growing in terms of sales.
- The study reveals that other variables (MS, CR) have the positive association but not significant.
- The study reveals that the Core Resources mean value is 8.45%, R&D mean value is 4.92% and Investment value is 21.40% has a high mean values.
- The results of the R&D explain that there is positive correlation with growth (net sales).
- The results indicating the correlation between Investment and growth is also
- From the analysis it is known that, in case of CR and MS negatively correlated each other. R&D and Investment positively correlated each other.
- The regression results of the explanatory variables make it clear that R&D determining the growth of the company with positive way and among the selected variables of Cipla pharmaceutical company.

CONCLUSIONS:

This study analyzed the determinants of corporate growth by taking Cipla pharmaceutical company during the period from 2002-03 to 2011-12. By using multiple correlations, it is clear that the R&D and Investments has high positive influence with the growth. Further, the results confirm that significance of R&D stock and Investment both has positively determining the corporate growth by the statistical tool of multiple regressions. And MS, CR and Investment have negative influence with growth (net sales) of the company. But not statistically significant. Finally, the Cipla Pharmaceutical Company is growing drastically in terms of sales, which imply that there is a wide scope in the future. So it could decide on for more sales, R&D stock to enjoy the benefits which increases the value of shareholders..

SUGGESTIONS:

- It suggests that high Investments are required to increase the growth of the Cipla pharmaceutical company.
- This study also suggests that R&D stock is attractive to growing the Cipla pharmaceutical company.
- It also suggests that the sales have to be increase for the development of the company.

REFERENCES

1. Baumol W (1959), *Business Behaviour, Value and Growth*, Macmillan, London.
2. Chauvin, K. W., and M. Hirschey. 1997. Market Structure and the value of growth. *Managerial and Decision Economics* 18 (3), May).
3. Kumar. P (1985), "Corporate growth and profitability in the larger Indian Companies",
4. Parker, J.E.S., "Profitability and Growth of British Industrial Firms," *The Manchester school of Economics and Social Studies*, Vol.32, pp.105-12.
5. Orr, D., "The Determinants of Entry: A Study of Canadian Manufacturing Industries," *Review of Economics and Statistics*, Vol.56, 1974.
6. Shanmugam K R and Bhaduri Saumitra N (2002), "Size, Age and firm Growth in the Indian manufacturing sector", *Applied Economics Letters*, Vol.9,pp 607-613.
7. Harabi Najib (2003), "Determinants of firms Growth: An Empirical Analysis from Morocco".
8. Subhash Chander and Priyanka Agarwal (2007), *Determinants of corporate growth: An empirical study of Indian drugs and pharmaceutical industry*, *The ICfain Journal of Mangement Research*, Vol.VI, No.10.
9. *The Determinants of corporate growth from the university of St Andrews* 23rd June 2010 by Rosique, Francisco.
10. Dr. R.Amsaveni and S. Gouthami (march, 2012), "Determinants of capital structure: A study of the Pharmaceutical Industry in India", *Indian journal of Finance*.