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Fund Management in Pharmaceutical Industry in India

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Keywords : Pharmaceuticals, Fund Management, India

INTRODUCTION

The Indian pharmaceutical industry currently tops the chart amongst India's science based industries with wide ranging capabilities in the complex field of drug manufacturing technology. A highly organized sector, it is estimated to be worth \$ 4.5 billion, growing at about 8 to 9 percent annually. It ranks the third in the world in terms of volume, technology, quality, value and the vast range of medicines that are manufactured. The total turnover was \$ 21.04 billion and domestic market was worth \$ 12.26 billion. It ranges from simple headache pills to sophisticated antibiotics and complex cardiac compounds; almost every type of medicine is now made in the Indian pharmaceutical industry. The Indian pharmaceutical sector is highly fragmented with more than 20,000 registered units. It has expanded drastically in the last two decades. The pharmaceutical and chemical industry in India is an extremely fragmented market with severe price competition and government price control. The pharmaceutical industry in India meets around 70 percent of country's demand for bulk drugs, drug intermediate, chemicals, tablets, capsules, orals, and injectibles. There are approximately 250 large units and about 8000 small scale units which form the core of the pharmaceutical industry in India.

India tops the world in exporting generic medicines worth \$ 11 billion and its drug market to grow at a CAGR of around 17 percent 2012 - 13 and 2014 - 15. The study aims at accessing financial health of the business analyze the percent scenario of drugs and pharmaceutical industry and also gives an idea of the position of the companies chosen in the market and to recommend for investing in the companies which tend to maximize the return.

METHODOLOGY

The study was based on descriptive method and the data was secondary in nature. The data from publications, journals and websites of center for monitoring Indian economy organization of pharmaceutical producers of India and other related financial websites were obtained. Judgement sampling is used for selecting the sample unit considers at the representative of the population, the sample of drugs and pharmaceuticals industries are Cipla, Ranbaxy Laboratoires, Dr. Reddy's Laboratoires, Sun Pharmaceuticals, Novartis India, Merck Pharmaceuticals, Cadila Health Care, GlaxoSmithKline Pharmaceuticals, Orchid Chemicals and Pharmaceuticals and Glen Mark Pharma. After the data collection, processed and analyzed in accordance with as outline. Hypotheses were formed and proved with help of statistical tools to arrive at certain conclusions.

ANALYSIS AND INTERPRETATION

1. INDUSTRY LIFE CYCLE

Many industrial economists believe that the development of almost every industry may be analyzed in terms of the life cycle with four stages. Pioneering stage, Rapid growth stage, maturity and stabilization stage and decline stage.

a) Pioneering Stage:

During this stage, the technology and the product is relatively new. Lured by promising prospects many entrepreneurs enter the field. As a result, there is keen and often chaotic competition. Only a few entrants may survive this stage.

b) Rapid growth Stage:

Once the period of chaotic developments is over, the rapid growth stage arrives. During this period, firms which survive the intense competition of the pioneering stage, witness significant expansion in their sales and prints.

In the 2000s market for drugs and pharmaceuticals industry changed dramatically due to change in the consumerism and the use of internet which made the possible the direct purchase of medicines by drug consumers and of raw materials by drug consumers transforming the nature of business. The ill health caused by pollution and imbalance of work and life also increases the demand for drugs and medicines. Increased export, increased demand and high consumption expenditure enjoys the maturity stage of drugs and pharmaceutical industry.

c) Maturity and Stabilization Stage:

After enjoying an above-average rate of growth during the rapid growth stage, the industry enters the maturity and stabilization stage. During this stage, when the industry is more or less fully developed, its growth rate is comparable to that of the economy as a whole.

d) Decline stage:

With the satiation of demand, encroachment of new products, and changes in customer preferences, the industry eventually enters the decline stage, relative to the economy as a whole. In this stage, which may continue infinitely, the industry may grow slightly during prosperous periods, stagnate during normal periods, and decline during recessionary periods.

The sales figures of Drugs and pharmaceuticals industry for the period 2001 - 02 to 2010 - 11 is used to analyze the trend in sales over the past years Model fit is a tool used where regression equation is formed using non linear regression. The following table presents the total income or earnings growth percentage of drugs and pharmaceutical industry for the period 2001 - 02 to 2010 - 11.

TABLE 1 EARNINGS GROWTH

Sl. No.	Year	Sales (Rs in Crores)
1.	2001 - 02	23547
2.	2002 - 03	26034.7
3.	2003 - 04	28975.6
4.	2004 - 05	33621.4
5.	2005 - 06	43902

6.	2006 - 07	51971
7.	2007 - 08	63536
8.	2008 - 09	74904
9.	2009 - 10	85515
10.	2010 - 11	92956

Source: Secondary Data

The regression equation using the above table as follows

$$Y = 0.4348x^8 + -18.7185x^7 + 334.376265x^6 + -3207.7822x^5 + 17858.7850415503x^4 + -58210.3907x^3 + 107664.795063933x^2 + -100210.3172x + 59329.4699 S$$

Using the above regression equation, the sales of drugs and pharmaceuticals industry for the next five years can be predicted. It is shown in the following table.

TABLE 2 SALES FORECAST

Year	Sales (Rs. in Crores)
2012	98112.6
2013	106406.5
2014	114700.4
2015	122994.3
2016	131288.2

Source: Secondary Data

The above prediction indicates that in the following years, the sales of drugs and pharmaceuticals industry will continue to be on the uptrend. Thus the industry and pharmaceuticals industry in our country continues to be in the maturity stage and it may move to stabilization. Increased investments spent by the drugs and pharmaceuticals companies in research & development to increase sales and withstand competition evidences the situation.

3. TREND ANALYSIS

The following table present the total drugs and pharmaceuticals export across the world for the record from 2001 - 02 to 2010 - 11.

TRADING VOLUMES

The following table shows the total trading volumes of drugs and pharmaceuticals scrip's for the period 2001-02 to 2010-11.

TABLE 7 TRADING VOLUME

Sl. No.	YEAR	TRADING VOLUMES (Rs. in Lakhs)
1.	2001 - 02	2134 529
2.	2002 - 03	2550 020
3.	2003 - 04	1420 923
4.	2004 - 05	5275 048
5.	2005 - 06	6272 304
6.	2006 - 07	6938 574
7.	2007 - 08	7251 769
8.	2008 - 09	7708 020
9.	2009 - 10	8816 411
10.	2010 - 11	10305 614

Source: Secondary Data

This analysis can be used to predict the total trading volumes of drugs and pharmaceuticals scrip's with the help of the table.7 The total trading volumes trend line $Y = 942039x + 686107$, total trading volumes of drugs and pharmaceuticals scrip's is estimated to be Rs.11048536 lakhs.

CORRELATION

Analyzing the correlation between sales and gross domestic

product (GDP) Correlation is used to analyze the relationship between sales of drugs and the GDP of the economy.

Null Hypothesis: There is no significant between sales and GDP.

TABLE 8 CORRELATIONS BETWEEN SALES AND GDP

Particulars	Sales	GDP
Sales Pearson Correlation Sig. (2-tailed)	1	.083 .389
GDP Pearson Correlation Sig. (2-tailed)	.083 .389	1

The above table indicates sales and GDP are positively correlated and the correlation is 0.083. The significant value is 0.389 which is greater than 0.05. Hence null hypothesis is rejected; this helps us to arrive at an inference that there is a significant relationship between sales and GDP.

ANALYZING THE RELATIONSHIP BETWEEN SALES AND INTEREST RATE

The relationship between sales of the drugs and pharmaceuticals industry and interest rate of our economy is analyzed using correlation.

Null Hypothesis: There is no significant relationship between sales and interest rate.

TABLE 9 CORRELATIONS BETWEEN SALES AND INTEREST RATE

Particulars	Sales	Interest Rate
Sales Pearson Correlation Sig. (2-tailed)	1	-.114 0
GDP Pearson Correlation Sig. (2-tailed)	-.114 0	1

The sales and interest rate are negatively correlated with -0.114. the significant value is 0 which is less than 0.05. hence H) and null hypothesis is rejected. So, there is no significant relationship between sales and interest rate.

ANALYZING THE RELATIONSHIP BETWEEN SALES AND INFLATION

The relationship between sales and drugs and pharmaceuticals industry and inflation of the economy is analyzed using correlation.

Null Hypothesis: There is no significant relationship between sales and inflation.

TABLE 10 CORRELATION BETWEEN SALES AND INFLATION

Particulars	Sales	Inflation
Sales Pearson Correlation Sig. (2-tailed)	1	.157 .102
Inflation Pearson Correlation Sig. (2-tailed)	.157 .102	1

There is a positive correlation between sales and inflation. The significant value is 0.102 which is higher than 0.05 and null hypothesis is rejected. So there is a significant relationship between sales and inflation.

ANALYZING THE RELATIONSHIP BETWEEN SALES AND CONSUMPTION EXPENDITURE

The relationship between sales of the drugs and pharmaceuticals industry and consumption expenditure is analyzed with the help of correlation.

TABLE 11 CORRELATION BETWEEN SALES AND CONSUMPTION EXPENDITURE

Particulars	Sales	Inflation
Sales Pearson Correlation	1	.142
Sig. (2-tailed)		.138
Consumption Pearson Correlation	.142	1
Sig. (2-tailed)	.138	

The sales have positive correlation of 0.142 with consumption expenditure. The significant value is 0.138 which is greater than 0.05. Hence, null hypothesis is rejected. Therefore we can infer that there is a significant relationship between sales and consumption expenditure.

4. MULTIPLE - REGRESSION

Multiple regressions are used to analyze the relationship among variables. The variables considered are sales of the drugs and pharmaceuticals industry and the companies chosen, GDP of the economy, Interest rate, Inflation and Consumption Expenditure.

Null Hypothesis: There is no significant relationship among the variables chosen.

A regression equation can be formed, having the sales as dependent variables. The various macro economic factors such as GDP, Inflation, and Interest rate and Consumption expenditure are considered as the independent variables.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
GDP	188.408	1057.769	.023	.178	.859
Inflation	579.656	972.911	.111	.596	.553
Consumption	.003	.024	.026	.143	.886
Interest	-720.417	2946.943	-.034	-.244	.807

The significant value for the variables GDP and sales is 0.859. It is greater than 0.05. Hence null hypothesis is rejected. So, there is a significant relationship between sales and GDP. The significant value for the variables sales and inflation is 0.553 which is greater than 0.05. Hence null hypothesis is accepted. Therefore, there is a significant relationship between sales and inflation.

The significant value for sales and consumption expenditure is 0.886 which is greater than 0.05. Therefore, null hypothesis is accepted. There is a significant relationship between sales and consumption expenditure.

The significant value for sales and interest rate is 0.807. Thus null hypothesis is accepted. There is a significant relationship between sales and interest rate.

A regression equation can be formed using the standardized coefficients or beta values.

Sales = 0.023 GDP + 0.111 Inflation + 0.026 Consumption Expenditure – 0.034 Interest

When the GDP increases by 1%, it leads in the sales of drugs and pharmaceuticals industry. When the inflation increases

by 1%, it leads to 11.1% increases in the sales of drugs and pharmaceuticals industry and vice versa. When the consumption expenditure increases by 1%, it leads to 2.6% increases in the sales of drugs and pharmaceuticals industry.

Interest rate has inverse relationship with the sales of drugs and pharmaceuticals industry. Thus when the interest rate falls by 1% it results in increases in sales of drugs and pharmaceuticals industry by 3.4% and vice versa.

FINDINGS

1. Life cycle analysis indicates that the drugs and pharmaceuticals industry is in the growing phase in our country. It provides wider scope for increased profit potential and huge market share.
2. The import of drugs and pharmaceuticals for the period 2012 is predicted to be Rs.9850.60 Crores.
3. The export of drugs and pharmaceuticals for the year 2012 is predicted to be Rs.44113.5 Crores
4. The sales growth percentage of drugs and pharmaceuticals companies for the year 2012 is predicted to be 16.6139%
5. The expenses growth percentage of drugs and pharmaceuticals companies is predicted as 16.2644%
6. The Price-To-Earnings ratio of drugs and pharmaceuticals scripps ratio for the year 2012 is estimated to be 26.634 times
7. The total trading volumes of drugs and pharmaceuticals scripps is estimated to be Rs.11048536 lakhs.
8. There is a significant relationship between sales of drugs and pharmaceuticals industry and GDP.
9. There is no significant relationship between sales of drugs and pharmaceuticals industry and interest rate of the economy.
10. There is a significant relationship between sales of drugs and pharmaceuticals industry and inflation rate
11. There is a significant relationship between sales of drugs and pharmaceuticals industry and consumption expenditure.
12. Multi-regression is used to analyze the degree of influence of each of the independent variable such as GDP, Interest rate, Inflation rate and Consumption expenditure on the dependent variable sales.

SUGGESTIONS TO THE INVESTORS

1. The drugs and pharmaceuticals industry in India is in the growth stage, there is an increased demand for drugs and medicinal products. This witnesses profit potential and huge market to serve. Hence, choosing this industry to make an investment is recommended.
2. The companies chosen are the major players in Indian drugs and pharmaceuticals, GlaxoSmithKline and Ranbaxy Laboratories. The investor can choose these companies to construct an optimum portfolio.
3. The drugs and Pharmaceutical companies chosen have the history of continuous and growing dividend, bonus share issue and rights issue, share splits.
4. The drugs and Pharmaceutical companies' scripps bring more return and less risk to the long term investors than short term investors and day traders.
5. The investors are recommended to invest in the securities of the select drugs and pharmaceuticals companies with a minimum investment origin of 5 years.
6. The investors are recommended to invest in shares of listed companies they should watch the price movement