CHAPTER III RESEARCH DESIGN

3.1 Selection of the Industry

In recent times, Indian pharmaceutical industry has stunning and spectacular achievements which have developed it as a model industry of the country in performance. However, pharma players are required to focus on increasing their competitive positions by making necessary technological shift because the pharmaceutical value chain would depend on it. Recent advances in the field of biotechnology and information technology should also be focused by the Indian pharmaceutical industry. For sustained future growth, Indian pharma players need to attain the right product-mix.

India endows with opportunity to the global pharma players to make desired technological shift in process and in location. Indian pharma market tempts the pharma players the world over to invest in it. Indian pharmaceutical industry has to focus on tapping the huge potential of exports in overseas markets including regulated markets which have a major share in the world’s pharma because many developing countries have zeroed in on India to source their needs for pharmaceuticals. As MNCs are looking to outsource their products from India so as to reduce cost, Indian pharma players are required to focus on CRAM.
In the post product-patent regime after 2005, pharma players will be required to develop core competencies which will play vital role in ascertaining their future. As major global pharma players are improving their R&D efforts and distribution to penetrate markets through merger and acquisition, Indian pharma companies will have to take seriously merger and acquisition options of either companies or products. Factors like marketing of products to several regions, forward and backward integration capabilities, co-marketing and licensing agreements will also play an important role in determining the future of the pharma industry.

Pharma players manufacturing bulk drugs are required to think of becoming approved vendor in regulated market with a view to carrying out sustainable and stable business. For this, they are required to set up a Research & Development base for basic research with or without alliance even up to pre-clinical stage, to work for newer molecules (A molecule is defined as a sufficiently stable electrically neutral group of at least two atoms in a definite arrangement held together by very strong chemical bonds.), NCEs, NDDS (New Drug Discovery System) and ICEs (Improved Chemical Entities) and to establish cGMP and USFDA compliant facilities.
Pharma players manufacturing formulations are required to think of entering into alliance with multinationals for marketing and distribution of their patented products in India over and above developing patents through NDDS, outsourcing, and networking. Moreover, bulk drugs and formulations manufacturers are required to take seriously patent products set-up, joint-alliance, contractual set-up and captive consumption of APIs to produce cost effective formulations with a view to meeting the challenges posed by the product patent regime.

Thus, it can be said that Indian Pharmaceutical Industry is no more third world copycats. Indian Pharmaceutical players have emerged as global players with the help of institutional transformation and strategic renewal and hence it is selected for the present study to know the impact of dividend policy on its shareholders’ wealth.
3.2 Significance of the Study

The pharmaceutical industry has unique dividend function as compared to the rest of the industries in India. Though many studies have been conducted in analysing dividend policy of various industries including pharmaceutical industry in India, the present study would help to understand financial variables’ pattern and structure of leading pharmaceutical companies in India. Therefore, the present study is undertaken with a view to give an insight into the performance of selected private pharmaceutical units from India with a view to covering gaps in the earlier studies.

As new theoretical and practical knowledge would be added to the breathing stockpile of knowledge and acquaintance, the study has academic significance and relevance and will act as a magnum opus on the subject for further research and development as far as India is concerned. The study is expected to help various stakeholders i.e. management, moneylenders & creditors, owners & investors, employees & trade union, government etc. in decision making process at their own. It would facilitate shareholders, investors, prospective investors, investment and financial analysts to spot the determinants of performance of the company and industry. It would also endow with penetrating understanding to financial institutions, money lenders, banks to
understand financial position and debt repaying capabilities of the companies. It would also divulge new panorama to the industry association and the government in understanding characteristics of the companies for inter and intra firm comparison. It would also give different perspective of the analysis to the academic researchers, financial analysts, securities researchers, company and industry. Thus, the study of dividend analysis and its impact on shareholders’ wealth of various pharma players in India will be useful to different stakeholders.

The study undertaken endeavours at getting an insight into the dividend policy and its impact on shareholders’ wealth of selected pharmaceutical players in India. Evaluation of the performance and quality of functioning of selected companies over a period of eight years is the fundamental objective of the study.

With a view to measuring the ability and efficiency of a particular company in particular and industry in general over a period of time, dividend policy of a business is considered as the statistical yardstick, a measure or standard used for comparison. As the reasonable amount of profit is ploughed back in the business, retained earning is also considered as the main source of creating shareholders’ wealth and important factor for the growth of the business. Retention of profit in the
business is also a vital source of finance on which no return is to be given.
The Impact of Dividend Policy on Shareholders’ Wealth of Selected Major Pharmaceutical Units in India

1.3 The objectives of the Study

The objectives of the present study are:

1. To analyze dividend policy adopted by the selected pharmaceutical companies of India through various tools and thereby financial performance thereof.

2. To study net worth of the selected pharmaceutical companies of India through various tools and thereby financial performance thereof.

3. To study the impact of dividend policy and other determinants on shareholders’ wealth.

4. To examine and analyse the available data regarding the selected pharmaceutical players with a view to examining whether dividend policy is favourable or not. If favourable, the degree of its efficiency will be examined and if unfavourable, the reasons for that will be found out.

5. To present summary of the study and to make suitable suggestions to the companies under study for having beneficial dividend policy from the investors’ perspective.

6. To bridge gap between the theoretical and practical part of dividend policy analysis and its impact on shareholders’ wealth of the pharmaceutical companies in India.
3.4 Hypotheses

The selection of the topic is made with a view to evaluating and appraising the impact of dividend policy on shareholders’ wealth of the selected pharmaceutical units in India and measuring competence and effectiveness of them in that context. Against this backdrop, the following hypotheses have been formulated in order to test their validity in the context of selected pharmaceutical units in India:

3.4.1 Null Hypotheses

1. There is no significant difference between actual and trend values of dividend payout among the selected players during the study period.
2. There is no significant difference between actual and trend values of net worth among the selected players during the study period.
3. Various determinants of shareholders’ wealth are statistically insignificant in explaining shareholders’ wealth of the companies under the study.

3.4.2 Alternate Hypotheses

1. There is significant difference between actual and trend values of dividend payout among the selected players during the study period.
2. There is significant difference between actual and trend values of net worth among the selected players during the study period.

3. Various determinants of shareholders’ wealth are statistically significant in explaining shareholders’ wealth of the companies under the study.
3.5 Research Methodology

3.5.1 Sampling, Geographical Coverage and Period of Study

Keeping in view the limitation of time, efforts and cost; it is not possible to study dividend policy and its impact on shareholders’ wealth of all pharmaceutical companies of India. For the purpose of study, only following top selected private pharmaceutical companies have been selected on the basis of performance, position, sales and paid up capital for the period of eight years i.e. 2001-02 to 2008-09:

1. Alembic Chemicals,
2. Cadila Healthcare,
3. Cipla,
4. Dr. Reddy’s,
5. Lupin Labs,
6. Nicholas Piramal,
7. Ranbaxy Labs,
8. Orchid Chemical and Pharmaceuticals,
9. Sun Pharmaceuticals,
10. Torrent Pharma and
11. Unichem Labs
3.5.2 Sources of Data

The study is mainly based on secondary data. Secondary data has been collected from annual reports of different companies under the study. Further information has been collected from CMIE (Centre for Monitoring Indian Economy) reports, RBI (Reserve Bank of India) bulletin, Annual Survey of Industries, Reports of Association of companies, Institute of Chartered Financial Analyst, Institute of Financial Management and Research, Libraries of various Institutions, various magazines, journals, research publications, dailies and periodicals such as Economic Times, Applied Finance, Financial express, Fortune India, Investment Today, Capital Market, Dalal Street, Business Today, Business World, Business India, Finance India, web site of organizations, consultants’ reports etc.

3.5.3 Tools of Analysis

For the purpose of analysis of the study, various accounting and statistical tools have been utilized. Following accounting techniques have been used for dividend policy analysis:

1. Dividend Trend Analysis
2. Net Worth Trend Analysis
3. Determinants of Shareholders’ Wealth
Following statistical techniques have been applied for carrying out research work systematically:

1. **The Arithmetic Mean** ($\bar{x}$): Arithmetic mean is the quantity obtained by dividing the sum of all the observations by the number of observations. The following formula is used to calculate the arithmetic mean:

$$\bar{x} = \frac{\sum X}{N}$$

Where, $\sum X = $ Sum of Variables and $N = $ Number of Observations

Arithmetic Mean should be computed for the purpose of calculation of different profitability ratios and for determining and measuring the trends of various figures relating to profitability between the years and companies.

2. **Coefficient of Variation** (CV)

A problem where it is required to compare the variability of two or more than two series, Co-efficient of Variation is used. The series is said to be more variable or conversely less consistent, less stable or less homogenous, if the co-efficient of variation is greater. Similarly, the series is said to be less variable or more consistent, more stable or more homogenous, if the co-efficient of variation is less. The following formula is used to calculate co-efficient of variation:
CV = $\sigma / \bar{x}$

Where, $\sigma =$ Standard Deviation and $\bar{x} =$ The Arithmetic Mean

Co-efficient of variation should be computed for the purpose of comparison of variability in the profitability ratios between the years and companies.

3. **Trend Analysis**

   Trend analysis is used with a view to computing the index of change in a variable. It is obtained with the help of the following formula:

   $I_t = (Y_t / Y_0) 100$

   Where, $I_t =$ Trend Indices

   $Y_t =$ Value of the Variables in the Year for which Index is to be Computed

   $Y_0 =$ Value of Variable in the Base Year

Trend indices are computed for the purpose of determining the change in the production, sales and profit over the period of time.

4. **Analysis of Variance (ANOVA)**

   The technique of ANOVA is useful in determining whether the samples have the same mean as the population from which they are drawn. It is also applied for the analysis of dividend trend, net worth trend and in studying the impact of dividend policy on shareholders’ wealth. The calculated values of F are compared with
the table values. If calculated value of ‘F’ is greater than the value at pre assigned levels of significance, the null hypothesis is rejected otherwise accepted.

5. Multiple Linear Regression

With a view to ascertaining the impact of dividend policy on shareholders’ wealth, the technique of multiple linear regression has been applied. With the help of multiple linear regression technique, various variables have been taken together and identified as determinants of shareholders’ wealth and the model has been developed.

6. Kruskal Wallis Test

In addition of this Kruskal Wallis test is also applied in order to overcome the precondition of normal distribution in case of ANOVA. In the test, all the elements of different samples are pooled together and they are ranked with the lowest score receiving a rank value of 1. Ties are treated in the usual fashion for ranking data. If all the samples belong to the same population (the null hypothesis), then the sum of the ranks of the elements of each sample would be equal. Let n be the sum of the ranks of the elements of the ith sample. The kruskal-wallis test uses the $X^2$ – test to test the null hypothesis. The test statistics is given by
\[ H = \frac{12}{N(n+1)} \sum_{i=1}^{K} \frac{r_i^2}{n_i} - 3(n+1) \]

Where \( n \) is the total number of elements in the \( k \) samples. \( H \) follows \( X^2 \)-distribution with \( (k-1) \) degrees of freedom. The null hypothesis is rejected if the calculated value of \( H \) is greater than \( X^2 \).
3.6 Limitations of the Study

Following limitations are expected from the Study:

1. As the study is based on secondary data, the findings of the study depend on the accuracy of such data.

2. As the study is based on the financial information available from annual reports and researcher has no access to internal data, it is not possible to exemplify inside view of organisation in the study.

3. The study is based on various accounting and statistical tools which suffer from certain limitations and hence findings of the study might have been affected by them.

4. As the study is based on certain selected pharmaceutical units in India only and sample census has its own limitation as compared to population census and hence accuracy and perfectionism in conclusion about the pharma industry in India may be affected by it.

5. As the study has been carried out for a period of eight years only due to time constraint, precision in conclusion about the impact of dividend policy on shareholders’ wealth of the pharmaceutical industry in India as well as companies under the study may be affected.
3.7 Chapter Scheme

The study has been systematized into following seven chapters. Each of the chapter has been dedicated to some aspect of the study entitled “The impact of dividend policy on shareholders’ wealth of selected major pharmaceutical units in India.”

Chapter I Introduction

It deals with the introduction of the study, concept of dividend policy, determinants of dividend payment decision, shareholders’ wealth and its linkages with dividend policy decisions, dividend policy and agency problem and dividend policy and asymmetric information.

Chapter II Literature Review of Empirical Work on Profitability Analysis

It deals with the survey of existing literature of empirical research work done on dividend decision and its impact on shareholders’ wealth of selected manor pharmaceutical units in India.

Chapter III Research Design

It deals with selection of the industry, significance of the study, objectives of the study, hypotheses of the study, research methodology, limitations of the study, and chapter scheme.
Chapter IV  Analysis of Dividend Policy

It deals with the dividend payout trends of the companies under the study and analyzes dividend policy adopted by the companies.

Chapter V  Analysis of Shareholders’ Wealth

It deals with the net worth trends of the companies under the study and assesses wealth of the shareholders.

Chapter VI  Determinants of Shareholders’ Wealth

It deals with study of impact of various determinants on shareholders’ wealth of the companies under the study.

Chapter VII  Findings and Suggestions

It summarizes the findings of the study on the impact of dividend policy on shareholders’ wealth of pharmaceutical industry in India and suggestions for triumphant endurance of pharmaceutical industry in India.