CHAPTER THREE

RESEARCH DESIGN
3.1 INTRODUCTION

Dividend payout decision has always been a subject of interest among financial analysts, academicians, and researchers as they are interested in studying the extent in which the earnings of a company are distributed as dividend among the shareholders as also the retained earnings. The dividend decision is an integral part of a company's financial decision making, as it is explicitly related to the other two major decisions, the investment decision and the financial decision.

Dividend decision involves deciding as to how much dividend should be paid (payout ratio) and the form in which it should be paid to the shareholders. The decision is taken in the light of the investment opportunities available and alternative financing options. A zero dividend payout ratio is common for young and rapidly growing companies with good investment opportunities.

On an average, dividend payout in India has decreased to thirty percent at present from 60 percent thirty years ago. However, companies may also be discouraged from paying higher dividend when these are doubly taxed—once in the hands of the company and again in the hands of the shareholders.

3.2 STATEMENT OF THE PROBLEM

Dividend is that part of the net earnings which is free from creating mandatory reserves and meant for distribution among the shareholders who wishes to maximize their wealth while simultaneously minimizing their risk.

A company needs funds to finance its sustainability and growth. If the company pays out most of the profits it earns, then for business requirements and farther expansion it will have to depend upon outside sources such as issue of
debts or new equity shares. So, dividends in a form are paid according to the policies and decisions of the management regarding the retained earnings of the firm.

Among all the corporate financial decisions few are as strategically important as dividend decisions. Corporate dividend policy plays an important role and affects the capital structure as well as future dividends.

From the micro concept as long as there are investment projects with returns exceeding those that are required (in general mostly weighted average cost of capital) it would use retained earnings and the amount of senior securities will support to finance these projects.

If the firm has retained earnings left over after financing all acceptable investment opportunities, these earnings then would be distributed to the shareholders in the form of cash dividends, if otherwise there won’t we any dividends. The treatment of dividend policy as a passive residual, determine solely by the availability of acceptable investment proposals implies that the dividends are immaterial and irrelevant; the investors are rather indifferent between dividends and retention by the firm.

On the other hand, higher and higher dividend payments are sure to enhance the market value of the firm and the reputation of the management, but such a policy may mean less availability of internal funds and more dependence on external sources for reinvestment and expansion purposes. Thus, while determining dividend payments a prudent management strikes a balance between share holders preference and a firm’s long term interest, safeguarding the firm’s control.
Engineering industries are characterised by heavy plants and machineries, longer operating cycles, high depreciation, capital structure loaded with high term loans and high interest to pay, and sometimes due to this, higher restriction on paying dividends imposed by financial institutions.

This research study is aimed at identifying these factors and investigate into the extent of their influence on the dividend payout from the fact and happenings in the market and, on the other hand, from the opinions, viewpoints of both corporate managers and investors.

3.3 OBJECTIVES OF THE STUDY

This research study has these three principal objectives:

i) To study the trend in dividend payout in the various sectors of the engineering industry over a time period.

ii) To analyze the influence of sector specific characteristics on dividend payment pattern.

iii) a) To study the motivation of the Indian engineering industry for formulating their respective dividend policies.

(b) To study the perception and attitude of the investing community regarding and towards the dividend policies & practices adopted by the management.

3.4 METHODOLOGY

Data and statistical tools identification:
I. To fulfill these three objectives enumerated above the study relied both on primary and secondary data. Analysis, and interpretation of objectives (i) & (ii) were based on secondary data collected from CAPITALINE & CMIE databases.

Renowned economic and business journals like Capital Market, Dalai Street, Economic Times, ET 500, ICFAI'S, TOP 500 were consulted and top 500 performing companies were identified. Out of these top 500 companies, only the engineering concerns in the following sectors and numbers were chosen.

a) Automotives: 15 nos.

b) Auto components / Ancillaries: 31 nos.

c) Engineering Industry / Machine building: 42 nos.

d) Chemical / Petro chemical / paints: 35 nos.

e) Consumer Durables / White goods: 10 nos.

f) Steel / Ferro alloys: 30 nos.

g) Non ferrous metals / alloys: 10 nos.

h) Electronic / Telecom / IT Hardware: 10 nos.

**TOTAL** 183 nos.

For the first objective, dividend payment history of these industries over a time horizon of 12 years (1994-2006) were collected from CMIE & CAPITALINE data bases and trend analysis has been done. The performing industries were categorized into different dividend payment slabs in the ascending order and presented in a tabular form with an accompanying bar chart.

More over, linear and logarithmic time series regression has been done to evolve a theoretical pattern of the trend in dividend payments in different sectors.
over these 12 years. For each and every “time series regression”, goodness of fit by conducting “chi square test” has been checked and its appropriateness of the linear or logarithmic fit has been established.

For the second objective, correlation analysis and linear and non linear regression models have been developed involving seven identified factors and the dividend payout. Using extended Ms Excel Software under windows 2000 for each regression model the corresponding goodness of fit has been tested. Using “chi square” variate, and for each correlation co-efficient, the significance has been tested using ‘t’ statistic.

The sector specific factors identified as having potential influence on dividend payout are summarized as follows:

i. Internal wealth creation in terms of net worth.

ii. External wealth creation in terms of market capitalization.

iii. Fixed cost and depreciation in terms of book values of plant and machinery.

iv. Determining internal control in terms of promoter’s equity.

v. Determining dominance and dictates of financial institutions in terms of institutional holdings.

vi. Liquidity, internally, in terms of net cash inflow.

vii. Liquidity externally, in terms of interest paid.

Apart from the computation of the correlation co-efficient with its significance, with respective regression equations, a multi variate regression equations involving five of the above seven factors as independent variables and
the dividend payment as a single dependent variable has been developed and its goodness of fit established.

The entire regression computation and their “chi square test” for each independent variable have been presented in tabular form. The line graphs for each regression equation including the multi variate one has been plotted.

For the third objective, which is based on primary data collected from the corporate finance managers and the investors as respondents, statistical analysis in terms of tables and pie charts / bar charts have been done for those questions which pertains to the background of the respondents.

The rest of the questions were considered for hypotheses testing. The hypotheses were designed to address the objective.

II. TOOLS AND TECHNIQUES OF DATA COLLECTION

Specific Information

a) Instrument Development

Two sets of questions were designed, one for the corporate finance decision makers and other one for the investors.

b) Pilot Study

Pilot studies were conducted to check the reliability, validity and consistency of the questionnaire in addressing the objectives. For the first questionnaire concerning corporate financial decision makers, twelve corporate executives and two academicians were respondents by personal approach in Bangalore. For the second questionnaire, fifteen equity investors and two academicians were respondents by personal approach in Bangalore.
Reliability measurement was conducted in terms of ‘Chronbach Alpha’. and for further confidence in the validity and reliability of the instruments. Alpha value was computed after collecting the actual data. The two Alpha values, so evolved an almost identical.

c) Sample Selection

There are two sets of respondents one is Corporate Manager and the other is investors. For that purpose, the sample frame is also two sets.

I. Sample Frame: Economic Times (ET) 500 for corporate sectors equity investors who are the customers of investment bankers all over India.

II. Sample Unit: Engineering industry comprising of eight sectors and individual investors of three categories i.e. salaried, professionals and businessmen. They are the sample elements also.

III. Sampling Element: Corporate firm’s Managers/Executives.

IV. Sample Size: 183 companies in engineering industry under ET 500 and 1000 investors all over India.

V. Types of Samples: Non-Probability (a) Judgmental for corporate respondents, multi-stage for investors. The stages are as follows:

i. At the first stage a list of investment bankers was made which includes the following:

1. Bajaj Capital
2. Karvy Consultants
3. Way to Wealth
4. ICICI Director
These investment bankers have got their client base all over India.

ii. The client bases of the above listed investment bankers were consulted and only the equity investors were chosen as respondents.

iii. Equity investors belong into either of the three categories i.e. (a) Salaried, (b) Professionals, and (c) Businessmen were chosen proportionally in numbers from all over India in the same proportion as in the client base.

As has been explained in the previous sections secondary data have been collected from company specific literature, industry survey reports, financial press and CMIE & CAPITALINE DATA from the library of Indian Institute of Management, Bangalore; Indian Institute of Science, Bangalore: and other institutes in and around Bangalore.

For primary data collection, a questionnaire for the Higher Level corporate finance executives was designed, locally administered to get responses to test reliability and consistency and then, after it was found reasonably reliable and consistent it was administered all over India. The questionnaire contains twenty-eight close ended and one open ended question. For the close-ended question the respondents were given five alternatives i.e.

- Strongly agree: S/A
- Moderately Disagree: MD
- Moderately agree: M/A
- Strongly Disagree: SD
- Neither Agree nor Disagree: NA-ND

The questionnaire was administered personally, through courier or post.

Totally eighty three (83) questionnaires which came back were found suitable for
Similarly, a questionnaire having twenty-five close-ended questions were designed and one thousand in numbers were administered to the investors all over India. These investors were accessed through the client base of renowned ‘Investment Bankers’ whose offices are in Bangalore and other branch offices all over India. Out of one thousand circulated only 477 were found fit for analysis.

3.5. PLAN OF ANALYSIS

As for plan of analysis, as has been explained already, data are analysed by tables, pie charts/graphs, bar charts and myriad statistical tests, viz. ‘Kolmogorov-Smirnov one sample test’, ‘Chi-Square test’, ‘t’ test for statistical inferences.

Reliability and Validity of Questionnaire by ‘Chronbach Alpha Test’

A sincere attempt has been made to establish the reliability and validity of the two questionnaires by ‘chronbach alpha test.

As both the questionnaires have been designed in groups to address various hypotheses, the reliability and consistency also have been tested by dividing the questionnaire in homogeneous groups and the alpha value has been computed by using ‘SPSS’ software for each group. An average “alpha value” has been computed for each of the two individual questionnaires.

Formation & Testing of Hypotheses

For fulfillment of the third objectives which is based only on primary data collected from the finance managers and investors, totally sixteen hypotheses, nine for objective 3(a) and seven for objective 3(b) are formed as follows:
Hypotheses Development

**H₀A-1:** Dividend policy is an active residual policy reflecting the competence and dexterity of the finance manager in managing profitability and liquidity together.

**H₁A-1:** Dividend policy is not an active residual policy and dose not reflect the competence and dexterity of the finance manager in managing profitability and liquidity together.

**H₀A-2:** For dividend, stability, continuity and growth are more important than the absolute value of the payout.

**H₁A-2:** For dividend, absolute value of the payout is more important than its stability, continuity and growth.

**H₀A-3:** The cost structure, capital structure and share holding pattern of a company significantly influence its corporate dividend policy.

**H₁A-3:** The cost structure, capital structure and share holding pattern of a company do not significantly influence its corporate dividend policy.

**H₀A-4:** Dividend decision of a company concerns only its equity share holders.

**H₁A-4:** Dividend decision of a company dose not concern only its equity share holders.

**H₀A-5:** The quantum of dividend payout of a company significantly and positively influences the liquidity of its share in the market.

**H₁A-5:** The quantum of dividend payout of a company dose not influence the liquidity of its share in the market significantly.
**H₀A-6**: The quantum of dividend payout of a company significantly and positively influences its market capitalization.

**H₁A-6**: The quantum of dividend payout of a company does not significantly and positively influence its market capitalization.

**H₀A-7**: The products made and the services rendered by a company significantly influence its dividend policy.

**H₁A-7**: The products made and the services rendered by a company do not significantly influence its dividend policy.

**H₀A-8**: Within the framework of engineering industry, sector specificity of a company significantly influences its dividend policy.

**H₁A-8**: Within the framework of engineering industry, sector specificity of a company does not significantly influence its dividend policy.

**H₀A-9**: Market performance of a company’s share in terms of risk and return is more of a technical issue and hence dividend payout does not significantly influence it.

**H₁A-9**: Market performance of a company’s share in terms of risk and return is more of a fundamental issue and hence dividend payout does significantly influence it.

**Hypotheses for Objective**

**H₀B-1**: A company’s fundamentals rather than market technicalities and more influence the investors’ decision significantly.

**H₁B-1**: Market technicalities and more rather than a company’s fundamentals influence the investors’ decision significantly.
**H₀B-2:** A company's constancy of dividend payout in terms of its EPS & DPS records influences investors' decisions significantly.

**H₁B-2:** A company's constancy of dividend payout in terms of its EPS & DPS records do not influence investors' decisions significantly.

**H₀B-3:** A company having dividend payout, stable and consistently increasing over time is significantly favoured by investors inspite of the dividend being moderate.

**H₁B-3:** A company having dividend payout, stable and consistently increasing over time is not favoured by investors if the dividend payout is moderate.

**H₀B-4:** Investors significantly prefer high dividend payout to its consistency.

**H₁B-4:** Investors significantly prefer consistency to high dividend payout.

**H₀B-5:** Investors significantly disfavour a consistent but moderate dividend payout.

**H₁B-5:** Investors significantly favour a consistent albeit moderate dividend payout.

**H₀B-6:** Investors significantly disfavour dividend payout as the right yard stick for judging performance of a company in engineering industry while taking investment decisions.

**H₁B-6:** Investors significantly favour dividend payout as the right yard stick for judging performance of a company in engineering industry while taking investment decisions.

**H₀B-7:** For investing in engineering industry, investors significantly prefer other fundamentals to dividend.
H_{B-7}: For investing in engineering industry, investors significantly prefer dividend to other fundamentals.

From the coded and quantized primary responses, ‘Kolmogorov-Smirnov one sample test’ and ‘chi square test’ have been conducted to test the validity of the respective ‘null hypotheses’.

For each null hypotheses respective suitable alternate hypotheses has been formulated before testing.

3.6 SCOPE OF THE STUDY

The study covers eight identified sectors of Indian engineering industry spread all over India for a time horizon of twelve years i.e. 1994-2006. As is evident the sample size of 183 companies is heavily dominated by pure engineering industries lie BHEL, L&T etc.

3.7 LIMITATIONS OF THE STUDY

This study suffers from certain limitations, which can be summarized as follows:

i) The study does not cover the companies, which did not pay dividends during the 12 year period under study, although, in terms of market capitalization and sales they are very much with in the top 500 performing company’s i.e. the study does not cover exploring the reasons for non payment.

ii) The study, by design, covers only engineering industry. The norms, traditions, practices and compulsions are different in other industries.
iii) The study covers 183 companies only in engineering industry out of 500 top most performing in all areas of business put together. The smaller size companies in engineering industries have not been covered.

iv) Sector wise 8 sectors of the engineering industries have been covered because they fall within the top 500 performing companies. There are a few other sector which falls under the engineering industries, but none of the companies are within the top 500 in sales and market capitalization and hence have not been considered.

v) Out of 183 respondent companies in the chosen category only 83 corporate responses could be analysed because a good number of questionnaires sent were not returned and a good number was partially filled.

vi) As far as the responses from the investors are concerned, although the coverage has been through out India, less than half i.e. 477 out of 1000 questionnaires sent could only the analysed, because that number only came back within a reasonable time.