Chapter I

Introduction and Design of the Study
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1.1 INTRODUCTION

The study of corporate dividend policy has been a key research area in finance. Many researchers have devised theories and provided empirical evidence regarding the determinants of a firm’s dividend policy. The dividend policy issue, however, is yet unresolved. Clear guidelines for an “optimal payout policy” have not yet emerged despite the voluminous literature. Yet we still do not have an acceptable explanation for the observed dividend behaviour of companies. We are yet to understand completely the factors that drive dividend decision and the manner in which these factors interact. This is known as the dividend puzzle in the finance literature.

Several hypotheses have been put forward to shed some light on this puzzle but in vain. It is a long-standing position of well-known finance researchers that dividends are irrelevant, and they have no influence on the share price, given that the capital markets are perfect (Miller and Modigliani, 1961)\(^1\). Some researchers have held a contrary position that considers that the capital markets are not perfect and therefore, dividends do matter. Several empirical surveys indicate that both managers and investors favour payment of dividends. Lintner (1956)\(^2\) found that US companies in sixties distributed a large part of their earnings as dividends, and they also attempted to maintain stability of dividend. Three decades ago, Fisher Black (1976)\(^3\) wrote that the harder we look at the dividend picture, the more it seems like a puzzle with pieces that just don’t fit together. A handful number of studies have been carried out both in India and abroad to analyse the significance of the above known dividend models and to find out the importance of other determinants. Most of these studies

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explain dividend behaviour in terms of net current earnings, cash flow, lagged dividend, lagged profit, depreciation provision, changes in sales, investment demand, etc., as important variables.

**Dividend Policy**

Dividend in the normal use of the word refers to that portion of earnings that is paid to stockholder. It is a reward to the shareholders of joint stock companies for their investment and risk bearing. It is usually paid in cash out of profits after the depreciation and the tax requirements have been made. In addition to cash dividend, a company may also issue bonus shares to its existing shareholders by means of capitalization of its free reserves. The amount of dividend paid to the shareholders depends upon the kind of dividend policy being pursued by a company. Dividend policy generally deals with the firm's decision about how much of its earnings to be paid out to its equity shareholders in cash dividends. It is the guiding principle in determining what portion of earnings should be paid out as dividend during the next period. As such dividend policy involves the decision to pay out earnings or to retain them for reinvestment in the firm. In fact, a dividend policy is a decision by a corporate board of directors and the management to follow a predetermined series of actions regarding the payment of dividends to shareholder.

**Dividend – Retention Decision Conflict**

While allocating the corporate profit, firms may decide either to retain them to meet their growth needs or to pay out them to the shareholders as dividend. As such, in studying the allocation of profit between these two components, it is very common to find that the decision with regard to one implies a decision with respect to the other. Although both the dividend and saving are complimentary, there are differences of opinion about which are regarded as the primary decision variable when appropriation policy is being formulated.

A close review of the literature on the subject discloses that there exist two schools of opinion on this issue. The first school of thought is led by Dobrovolsky (1951)\(^1\). He argues that corporate savings decision is an active and primary decision variable

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in the firm's policy framework. The other school of thought led by Lintner (1956)\(^1\) argues that dividend is a primary and active decision variable in the financial policy making of a company. According to this school of thought management first takes the dividend decision and the amount to be retained is a by-product of this decision.

**Importance of Retention Decision**

There is sufficient reason to believe that retention decisions are primary. In the case of most of the firms in the Indian context internal funds constitute about half of the total funds, whereas equity financing contributes only 10 percent of the total funds (Sharma, 1986)\(^2\). Therefore, corporate sector may not consider it essential to satisfy shareholders' preference. Even the investors, who have given their small saving and preference for assured and secured earnings, may prefer long-term gains. They may be satisfied with a firm retaining and investing earnings rather than pay them out in dividends, if the return on reinvested earnings exceeds the rate of return obtainable by the investor on alternative investments of comparable risk. Further and this is true in most cases that there is a higher tax rate on dividend income compared to that of capital gains. If the undistributed earnings are ploughed back in the form of investment which ensure the growth of the firm and thereby increase the value of the firm, the investors may feel sufficiently compensated by the capital gains even if dividend payments are not forthcoming.

There are several other reasons for the firms themselves considering retention as the primary decision variable. For one thing there is already a sufficient divergence of ownership and control. The managements may tend to become risk averse and prefer corporate saving at the expense of dividend. Quite apart from these matters of attitudes, the weak equity market may be such as to encourage firms to save and plough back as much profit as possible to finance the growth of the company. This may be particularly relevant in the case of growing firms. In these firms even

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though they have better future profit prospects, they may not be willing to distribute the profits to the stockholders. Instead, they may plough back them in the form of internal funds and utilize them for investment purposes.

**Importance of Dividend Decision**

Given the debt/equity ratio and the limits on internal funds, the alternative source of funds which a firm can use is the new issue of stocks. The firms recognise that high prices for its shares will be offered if the demand for its shares is high. The management of the firm may feel that a high rate of dividend payments attracts investors and increases the demand for its shares. This can happen whenever the shareholders consider the payout ratio of the previous year as the relevant information concerning the well being of the company.

It is often argued that the share prices of a firm tend to be reduced whenever there is a reduction in the dividend payments. This may result in a loss of reputation and goodwill. It may then be difficult to regain market position and maintain high share prices. Such a calculation, on the part of the management of the firm may lead to a stable dividend payout ratio. There are certain irreducible administrative costs each time the firm floats new issues. A loss of reputation and reduction in share price may necessitate further floatation to maintain the equity base. A stable dividend payout ratio may be maintained to avoid these costs.

The ability to maintain a stable dividend payout ratio also depends on whether or not such a policy enables the firm to retain adequate funds to finance its other obligations. This problem may not arise if the market demand and profit positions are stable. But in industries which experience cyclical instability for their products and the overall profit position is highly variable, it would be difficult to maintain a stable dividend payout ratio and have adequate funds for other uses in periods of slack demand. It may also be difficult to sustain dividend payments.

On occasions, the firm may have to maintain a stable dividend payout ratio simply because the shareholders expect it and reveal a preference for it. Shareholders
may want a stable rate of dividend payment for a variety of reasons. Risks averse
shareholder would be willing to invest only in those companies which pay high
current returns on shares. It is quite but natural to find that all shareholders are
interested in maximising their gains from their investments, the time horizon over
which they wish to accomplish it varies among investors. Some of them are partly or
fully dependent on dividend to meet their day to day needs. These classes of investors
generally include pensioners and other small savers. Similarly, educational
institutions and charity firms prefer stable dividends, because they will not be able to
carry on their current operations otherwise. Such investors would, therefore prefer
companies which pay a regular dividend every year.

In spite of such a dual importance of this problem, the theoretical determinants
of corporate dividend policy are less well established and this is an area in which very
little research has been done in a developing country like India. Against this
background this study is an attempt to identify the major determinants of dividend
policy and their relative significance on Indian Industries.

1.2 STATEMENT OF PROBLEM

Dividend policy is one of the most important financial policies not only from
the view point of the company but also from that of the shareholders, the consumers,
the workers and the government. For a company it is a pivotal policy around which
other financial policies rotate. It plays an important role in creating a healthy
investment climate for rapid economic growth of a country. Further it influences in a
very large measure, the savings pattern of an economy.

As an important decision in the area of financial management, dividend policy
decision determines the division of earnings between payments to shareholders and
reinvestment in the firm. Although both the corporate growth and payment of
dividends are desirable, these two goals are in conflict- a higher dividend rate means
less retained earnings and consequently a slower rate of growth in future earnings and
stock prices. In view of this multi-dimensional nature of dividend decision, a
deliberate policy has to be framed and pursued in this regard. It should not be allowed
to become just a series of adhoc decisions taken on the spur of the moment considering only the immediate availability of cash for dividend payment. Thus the objective of choosing a dividend policy should be to maximize the value of the firm to its shareholders. Given the objective of financial management, the firm should be guided by the considerations as to which alternative use is consistent with the goal of wealth maximization. Not all companies require a formal dividend policy. Closely held businesses in which the equity participations hold a position on the board of directors or maintain a working knowledge of the business probably do not require a formal policy. Formal dividend policies are normally associated with firms that have achieved significant size in revenue and variety of shareholders. The complexity of financial management and planning play an important part in determining when a formal dividend policy is required. Industrial organizations that are capital intensive and must engage in long-range planning to assure adequate supplies of capital in the future may require a specific dividend policy to assure that sufficient amount of funds are available when asset acquisition is undertaken. This present study will provide adequate information to the investors and companies to know the relative importance of the several determinants affecting at the time of dividend payment decision of the companies. Hence this study is an attempt to find out the answers for the following questions.

1. What is the trend of dividend payment of Indian industries?
2. How are the firms altering their dividend policy during slack period?
3. What are the factors that are considered by directors while determining the dividend payment?
4. Which fundamental factors are forcing the managers to reduce/omit the payment of dividend?

1.3 REVIEW OF LITERATURE

The determinants of corporate dividend policy is an issue which can be examined only by review of past studies on the subject. During the last four decades
corporate dividend policy has been a subject of enquiry of financial analysts, academicians and researchers. A detailed review on some of the major studies so far undertaken both in India and abroad on the dividend policy that helped the researcher to get an insight into the various determinants of dividend policy decision of the firms are as follows:

**Empirical studies made in abroad**

A classic attempt to explain corporate dividend behaviour was made by Lintner (1956). After conducting interviews with the personnel of numerous large, well established firms of United States of America, Linter concluded-(1) that the primary determinants of changes in dividends payout were the most recent earnings and the past dividends paid, (2) that management focused on the change in the dividends rather than the amount, (3) that changes were made only when management felt secure that the new level of dividends could be maintained, (4) that there was propensity to move toward some target pay out ratio for most firms, but the speed of adjustment toward the level differed greatly among companies and (5) that investment requirements generally had little effect on dividend behaviour. Thus, according to him, the existing rate of dividend in a company continues to be a “central benchmark” for the determination of current dividend. The level of current earnings is almost invariable the starting point in the management’s consideration of whether dividend should be changed in any given year. His hypothesis implies that, dividend payment is a function of net current earnings after tax and dividend paid in the previous year.

Darling (1957) in his study on dividend policy holds the view that lagged dividend as an explanatory variable in Linter’s model has no direct influence on the dividend decision making process. According to him the weight assigned to it in the regression equation is a reflection of some other variables that co-vary with the lagged dividends. He therefore concludes that the function based on lagged dividend

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may be very useful for short run prediction, but lagged profit would offer better explanation of the current level of dividend. As such he substituted lagged profit in place of lagged dividend in the Lintner’s model. Darling further adds some more independent variables like depreciation and amortization recoveries and also changes in sales over the previous two years. His hypothesis is that, for the universe of large industrial corporations aggregate dividend will tend to vary directly with current profits, past profits, depreciation and amortization recoveries and will tend to vary inversely with persistent changes in the level of sales.

Friend and Puckett’s (1964) study on dividend policy reports regression results on five United States Industry samples: chemical, electronics, electronic utilities, foods and steels in 1956 and 1958. The results of this study indicated that in non-growth industries (food and steel) there exists a strong investor preference for dividend, while in growth industries (electronic and electric utilities) there seem to have some preference for retained earnings.

Dhrymes and Kurz (1964) have attempted in their study an alternative view of dividend disbursal practice that does not rely on the autoregressive character of the model designed by Lintner (1956). They found that dividend payments are significantly affected by some factors not taken into account by Lintner. According to them the firms desire to maintain stable dividend may hamper investment by reducing internal funds available for capital expenditure. Further, their result suggests that investment needs have an influence on dividends, with greater investments reducing the dividend payout.

In another study Brittain (1966) used the cash flow version of Lintner’s model. He takes as his starting point the model proposed by Lintner and obtained statistically significant results, but at the same time found that better results could be

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obtained by certain modifications and adjustments. Brittain argues that cash flow is a more appropriate measure of the company's capacity to pay dividend as it reflects more faithfully true earnings. Further, dividend payment is considered as a charge prior to depreciation and hence should be related to earnings gross of depreciation. Besides, as regulations and accounting practices regarding depreciation allowance keep on changing, net current earnings would fail to reflect the movement of true earnings which is the ultimate basis of ability to pay dividend. Brittain (1966) uses this cash flow version of Lintner’s model in his study entitled “Corporate Dividend Policy”. His hypothesis implies that dividend payout is a function of cash flow and the dividend paid in the previous year. In addition to this, Brittain also used depreciation as a separate explanatory variable along with net current earnings after tax and lagged dividend and found significant results (Brittain, 1964).

Fama and Babiak, (1968) studied the various determinants of dividend payment by individual firms. They tried to test the validity of the Lintner’s model and other known models on corporate dividend policy. Their study revealed that Lintner’s model continued to explain dividend behaviour quite well and that a slightly different model with lagged earnings as well as lagged dividends did a slightly better job in that it had higher explanatory power.

Higgins (1972) found that consistent with the residual payout policy, dividends vary positively with earnings and negatively with the investments. His study reports United States cross-section tests for eight industries for the period 1961, 1963 and 1965. He observed that, inter-temporal differences in corporate dividends could be attributed largely to differences in profitability and investment needs.

LVLN Sharma and Koklee Kuin (2004) analysed the trade and services companies in Kuala Lumpur, Malaysia from 1998 to 2001. The results were found to

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be consistent with Lintner's model and they advanced evidence that stable dividend policies were preferred by the Malaysian corporate sector. The empirical results showed that the main determinants of current dividends were the lagged dividends and the current earnings. It also identified that stable rather than erratic dividend policies were preferred by the Malaysian corporate sector.

Kaustar Sen and P.V. Viswanth (2005)\textsuperscript{1} suggested that in the utilities industry it may be more appropriate to look at earnings retention rather than the more common dividend variables. Prior to deregulation, cash generated by the business was largely returned to shareholders whereas in deregulation period firms have been free to acquire and merge with other firms. Under these circumstances the investment opportunities hypothesis predicts that firms will reduce their dividend payouts in order to pay for these investments. They focused their hypothesis on deregulated electric utilities industry firms in USA for 10 years (1992 to 2001).

**Empirical studies made in India**

This section outlines briefly some of the studies made in India.

The work of Purmanandam and Hanumantha Rao (1966)\textsuperscript{2} is a micro time series analysis of fifty companies belonging to the cotton textile industry for the period 1946-63. The Lintner model is tried for each company with and without intercept term. An analysis of the size distribution of the estimates of the short and long run dividend payout ratios and reaction coefficients is made. The Lintner model proved to be adequate in explaining the dividend behaviour.

Krisnamoorthy and Sastry (1971)\textsuperscript{3} have analysed the dividend behaviour for the chemical industry for the period 1962-67. It is an annual cross section study of


40 public limited companies. The Lintner's model along with the cash flow variable was tried. The Lintner's model offers a good explanation of the dividend behaviour. Explanatory variables like investment expenditure and external finance are also introduced. The study reveals that investment activity seems to influence dividend policy of firms, implying higher savings when investment climate is favorable.

The work of Rao and Sarma (1971)\(^1\) on corporate dividend is a time series study based on the Reserve Bank of India data for the period 1955-56 to 1965-66. They have tried three variations of Lintner model, one with net profit another with cash flow and the third with net profit and depreciation separately. Their study is at three levels of aggregation: for all public and private limited companies separately, for four major industry groups and for ten important individual industries among the public limited companies. The study concludes that, the basic Lintner's model with profit variable is quite appropriate for explaining the corporate dividend behaviour at the aggregate level and in the case of five individual industries, whereas the cash flow variant turned out to be more appropriate for four-individual industries. The study further reveals that, the payout propensities differ considerably between the industries.

Kumar (1976)\(^2\) in his study has made an attempt to examine the influence of some of the major determinants of dividend payout, particularly the target payout ratios, in the corporate sector of India. The study is confined to four industries: General Engineering, Chemicals, Electricals and Cotton Textiles covering a period of three years: 1969, 1970 and 1971. The well-known Lintner's model and Brittain's cash flow model have been tried. The study result discloses that both in chemicals and general engineering industries, the earnings and cash flow variable along with lagged dividend variable seem to explain a large part of the variation in the dividend pay out


ratio. However, in electrical and cotton textiles, the earnings hypothesis explains the dividend variation better. Lagged dividend is found to be an important explanatory variable, statistically significant, for all the industries under study.

Dhameja (1978)¹ in his study tested the dividend behaviour of Indian companies by classifying them into size group, industry group, growth group and control group. His sample included 158 non government public limited manufacturing companies listed on various Indian Stock Exchanges. The study found that there was no statistically significant size on the other. Growth was inversely related to dividend payout and was found to be significant. Regarding dividend rates adjusted for bonus and right issue etc., it was significantly and directly related to industry growth and mildly to size. Dhameja also applied Lintner's model to the pooled data for the year 1963-72. His main conclusions are that dividend decisions are better explained by Lintner's model with current profit and lagged dividend as explanatory variables.

Bhole (1980)² in his study specifies model for the empirical testing of the determinants of corporate savings, dividends and share prices respectively. The study is based on Reserve Bank of India’s data on company finance, covering a period from 1960-61 to 1975-76. However the data relating to share prices have been collected from Bombay Stock Exchange Official Directory. Both the cross section and time series analysis have been conducted for carrying out the work. The profit allocation model has been tested on the time series data by using simple, multiple and stepwise regressions. The Lintner's model has also been tried. The study reveals that, Lintner's model of stable and active dividend policy does not perform well on Indian data for the study period.

Khurana's (1985)³ study is based on a judgement sample of 68 companies belonging to chemical, electrical goods, sugar, cotton and general engineering industries for the period 1962-63 to 1976-77. In his study Khurana estimated a few

known dividend models namely Lintner's model, Brittain's model Darling's model and Dobrovolsky's model to identify and determine their respective significance in the Indian context. Besides estimating these known models, Khurana has also tried with some other determinants like share prices, liquidity, investment demand, flow of net debt etc., which have a direct bearing on the dividend decision of the sample companies. The analysis reveals that Lintner's model of dividend behaviour is better than all other models; Determinants, the flow of net debt and the behaviour of share prices have some impact on the dividend decision of the sample companies.

Rita Sharma (1986) in her study attempts to develop a theoretical framework to approach the problem of primacy of dividend decision. She identified the appropriate concept of primacy and determined empirically the relationship of the primacy notion with the objective of the shareholders and the management. The basis of her modeling framework is that, each of the decision makers can have a short run and or long run objective and the dividend decision may be primary to the management of the firm and or the shareholders. Therefore both short run and long run models have been tried separately in her study. In the study, the short run objective is taken to be the maximization of share prices and the maximization of net worth is taken as the long run objective. Both the short run models and the long run models have been estimated at the level of the individual firms on the basis of the time series data for a selected sample of 71 firms. The firms included in the sample belong to general engineering, electrical equipments, chemical, cotton, paper and sugar industry groups. The study remarks that both the shareholder and the management have a short run objective (maximisation of share price) and/ or long-term objective (Maximisation of net worth). However, either one or both of these parties consider some other objectives to be more important.

S. Kevin (1992) has analysed the dividend distribution pattern of 650 private sector companies in India between September 1983 and August 1994. His study

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revealed that changes in dividend rates were not consistent with changes in earning rates. Thus dividend stability seems to be the primary determinant of dividend policy while profitability was only of secondary importance in the sense that companies strive to maintain stable dividends in spite of fluctuations in earnings.

Obaidullah (1993)\textsuperscript{1} in his study examined the dividend behaviour of a sample of Indian firms, comprising of thirty companies, which were considered for computation of Bombay Stock Exchange Sensitive Index (SENSEX). Hence the study focused on the dividend behaviour of these blue chip companies. The study covers a fifteen year period, 1976-90. It is evident from the analysis undertaken in this study that firms tend to follow a stable dividend policy. They appear to have a target long-term dividend pay out ratio and only partially adjust their actual dividends to achieve the target pay out ratio. Current dividends are observed to depend on current as well as past earnings. The findings of the study further disclosed that the Lintner’s model of dividend behaviour seems to fit reasonably well for Indian data. The evidence for a lagged relationship between earnings and dividends also seems to exist.

Mahapatra and Sahu (1993)\textsuperscript{2} in their study tried to test the validity of some known dividend models, namely Lintner’s model, Brittain’s cash flow model, Explicit depreciation model and Darling’s model to examine their relative significance in explaining the corporate dividend behaviour in Indian situation. For the purpose of the study data for the selected 90 public limited companies representing both the traditional and non-traditional industries were obtained for the period 1977-78 to 1988-89. A comparative review of the various regression models brings out the Brittain’s cash flow model as a model of good fit both at the macro level and industry group level. Based on this model the study further tried to examine the impact of a few more determinants of dividend behaviour like the investment demand, flow of net debt, liquidity, interest, behaviour of share price and changes in sales. Although the


last three factors were not found to have any significant impact on dividend decision of the sample companies, the impact of investment demand, flow of net debt and liquidity were found to be significant in the case of some sample industries.

Bhat and Pandey (1994)\(^1\) in their study conducted a survey to ascertain the perceptions of Indian managers about dividend decisions. According to their study the top five determinants of dividend policy are: 1) Current earnings, 2) Pattern of past dividend, 3) Expected future earnings, 4) Increasing equity base, and 5) Liquidity.

They consider industry practices as a least important factor. The study discloses that dividend policy influences the share price, although they do not consider the rationale for paying dividend for increasing share price. In their opinion, investors are not indifferent to dividends and capital gains. The study further discloses that the managers in India strongly believe that a company should strive to maintain an uninterrupted record of dividend payment and follow a stable pattern of dividend payment. They think that companies should have target pay out ratios and should not change their dividend policies if they cannot maintain it. They feel that current dividends depend, in part, on current earnings and in part on dividend paid in the previous year. In the view of managers, it is found from this study results that, shareholders in low tax bracket prefer more dividends than low or no dividends.

Manoj Anand (2001)\(^2\) in his study analysed the results of survey of 81 CFOs of BT 500 companies and PSUs in India to find out the determinants of dividend policy decisions of the corporate India. Most of the firms had target dividend payout ratio and dividend changes followed shift in the long-term sustainable earnings. The findings on dividend policy were in agreement with Lintners study on dividend policy. The management of corporate India believed that dividend decisions were important as they provide a signaling mechanism for the future prospects of the firm and thus affected its market value.

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R.P. Mahapatra and P.K. Biswasroy (2002) put forth the influence of profit after tax and cash flow on the dividend policy of the firm. They identified that dividend policy was influenced mostly by cash flow, a measure of company's capacity to pay profit after tax was found to be less significant determinant of dividend policy. Multiple regression equation was used for determining the coefficients of different factors. In this study they have selected 59 companies, covering four industries namely General Engineering, Cotton, Sugar and Paper for a period of 12 years (1987 to 1999) in India.

Jitendra Mahakud (2005) examined the influence of shareholding pattern on dividend payout ratio of the Indian companies which belonged to manufacturing industries during the period 2001-04. He has analysed 787 firms excluding public sector companies. A positive association of dividend with lagged dividend, earning, sales and size of the company was found. Debt to equity ratio was found to be negatively related with dividend. Institutional shareholders had greater impact or influence on the determination of dividend payout ratio and it affected dividend policy inversely.

JVM Sarma and SP Panda (2005) studied the large public limited companies for the period 1969 to 2000. Their empirical analysis followed Lintner's model. The results showed that, among the financial variables - profits, capital structure, sales change and lagged dividend demonstrated significant results, whereas investment demand doesn’t. This was because the estimates might be biased due to the presence of the lagged dependant variables as one of the explanatory variables.

George and Kumudha (2006)\(^1\) in their study on dividend policy with reference to Lintner's model bring out that current earnings play a significant role in deciding the dividend policy. The results clearly indicate that current year's dividend per share is positively related to current years earning per share and previous year dividend per share (lagged dividend) with correlation coefficient of 0.654 and 0.657 respectively.

1.4 SCOPE OF THE STUDY

This problem has been studied with reference to eleven selected industries viz. bank, cement, chemical & fertilizer, information technology, oil & gas, paper, pharmaceutical, shipping, steel, sugar and textile for the period 1997-98 to 2006-07. The study analyses the trend of profit-dividend relationships, and the trend in the payout policies of the companies under all industries selected, both industry-wise and size wise (by total assets) as well as cross-sectionally during the study period by applying simple regression technique with time variables as independent in additional to basic descriptive statistics like mean, standard deviation and coefficient of variation.

This study is mainly related to identify and determine the relative significance of various determinants having a bearing on the dividend policy decision of the sample companies with the use of multiple regression models both at the aggregate level and selected industrial group levels. Further, the study examines that the probability of dividend decrease / omission and increase / initiation is correlated to cash position and owners' capital by using the logistic regression analysis with binary coded "dividend reduction / omission" (0 for increase / initiation and 1 for reduction / omission) as dependent variable.

1.5 OBJECTIVES OF THE STUDY

The objective of the present study is to understand and analyze the corporate dividend policy decisions in India. The detailed objectives are as follows:

1. To study the trend and growth in actual dividend payment and dividend payout ratio of Indian companies by industry wise and size wise.

2. To evaluate the applicability of Lintner model, a basic dividend model as well as the applicability of extended version of Lintner model in explaining the dividend policy of companies in India across industries.

3. To identify the firm specific factors determining the dividend policy.

4. To elicit the relationship between firms’ specific factors and dividend reduction / omission for Indian companies across industries.

5. To summarize the findings and to give conclusion and necessary suggestions.

1.6 HYPOTHESES OF THE STUDY

In the course of analysis it has been proposed to test the following hypotheses with the help of the sample data. They are:

1. The trend and growth in dividend payment of the Indian companies is not linear.

2. There is no impact of profitability on dividend policy of Indian companies

3. The current year dividend policy is independent of the dividend policy of the companies in the past in India.

4. There is no significant influence of depreciation on equity dividend payment of companies in India.

5. There is no significant relationship between dividend payout and tangibility in Indian companies.

6. There is no significant relationship between reduction / omission in dividend payout and decline in profitability of Indian companies.
7. The probability of reducing / omitting the dividend payout is significantly higher with increase in debt fund in capital.

8. The likelihood of reducing / omitting the dividend payout is significantly higher with increase in capital investment.

1.7 RESEARCH METHODOLOGY

Sample Design

The study is explorative in nature and based on secondary data. The data for the study consist various financial statements of selected companies listed in the Bombay Stock Exchange (BSE) under Group A and B. The companies are selected using stratified sampling technique. Using this sampling technique, the companies are formed into groups called strata based on the Industry they belong to. Initially, it was decided to keep in the sample all the companies listed in the above group. However, on the further scrutiny it was found that only some companies have the data for the entire study period, while the others not. The inclusion of companies, which possess data for heterogeneous period of time undoubtedly, will distort the method of study. Hence they have been excluded. In total, 119 companies are finally selected across banking (20), cement (11), chemical & fertilizer (8), information technology (7), oil & gas (9), paper (9), pharmaceutical (15), shipping (9), steel (8), sugar (13) and textile (10) industries. The period of study is for 10 years from 1997-98 to 2006-07. The data has been collected from the Stock Exchange Directories and Capitaline data base.

Tools Used

To analyze the trend in Dividend Payout and Earnings over the period under study, the Linear Growth Rate (LGR) has been calculated using time series simple regression technique with time as independent variable for each selected industry. In addition to LGR, the general descriptive statistics like Mean, Standard Deviation and Coefficient of Variation are calculated to find out the central tendency as well as consistency in the trend. The formulae for descriptive statistics and LGR are given below:
(a) Mean ($\bar{X}$)

$$\bar{X} = \frac{\sum X_i}{n}$$

(b) Standard Deviation ($\sigma$)

$$\sigma = \sqrt{\frac{\sum X_i^2}{n} - (\bar{X})^2}$$

(c) Coefficient of Variation (CV)

$$CV = \left( \frac{\sigma}{\bar{X}} \right) \times 100$$

(d) Linear Growth Rate (LGR)

Consider a linear relationship between a study variable ($Y$) and time variable ($X$) as

$$Y = a + bX$$

The Linear Growth Rate ($\hat{b}$) is given by

$$\hat{b} = \frac{\sum xy - (\sum x)(\sum y)}{\sum x^2 - (\sum x)^2}$$

In this research, several independent factors have been tested with the use of well accepted multiple regression models. The Lintner dividend model has been the most often used as an empirical framework to describe the determinants of dividend payment behaviour of companies. In this research also the Lintner framework has been followed. In addition to basic Lintner model, extended version of Lintner model such as Brittain's Cash Flow Model, Brittain's Explicit Depreciation Model and Darling's Model have also been used for measuring the determinants of corporate dividend policy.
In the Brittain’s Cash Flow Model, current year free cash flow (FCF<sub>t</sub>) in the place of current year’s profit after tax in Lintner model has been used. Another model, Brittain’s Explicit Depreciation model, which is also an extension of Lintner’s model, incorporates depreciation in the current year as an additional explanatory variable. The Darling model, on the other hand, is slightly different from basic Lintner’s model. In this model, lagged profit after tax (PAT<sub>t-1</sub>) in the place of lagged dividend (DIV<sub>t-1</sub>) has been used. Further, current year change in sales over preceding two years (ΔSAL<sub>t</sub>) is also included along with current year depreciation in Darling’ model. These models are:

Lintner’s Model:

\[ DIV_t = \alpha + \beta_1 \text{PAT}_t + \beta_2 \text{DIV}_{t-1} + e \]

Brittain’s Cash Flow Model:

\[ DIV_t = \alpha + \beta_1 \text{FCF}_t + \beta_2 \text{DIV}_{t-1} + e \]

Brittain’s Explicit Depreciation Model:

\[ DIV_t = \alpha + \beta_1 \text{PAT}_t + \beta_2 \text{DIV}_{t-1} + \beta_3 \text{DEP}_t + e \]

Darling’s Model

\[ DIV_t = \alpha + \beta_1 \text{PAT}_t + \beta_2 \text{PAT}_{t-1} + \beta_3 \text{DEP}_t + \beta_4 \Delta\text{SAL}_t + e \]

Where,

\[ \begin{align*}
\text{DIV}_t & = \text{Equity dividend paid in the current year} \\
\text{DIV}_{t-1} & = \text{Equity dividend paid in the previous year} \\
\text{FCF}_t & = \text{Current year Free cash flow} \\
\text{DEP}_t & = \text{Current year depreciation and amortization} \\
\Delta\text{SAL}_t & = \text{Current year change in sales over the preceding two years} \\
e & = \text{error}
\end{align*} \]
From the regression analysis of above basic known models, only the extent of role played by last year dividend and current year net profit on current year dividend policy has been determined. Yet, it is not known whether there is any factor other than last year dividend and current year net profit associated with fundamentals of the companies play a significant role on dividend policy decision or not. So, a model with selected fundamental variables, like Volume of Sales, i.e., Size based on volume of sales (Natural log of current year sales turnover), liquidity position measured in terms of Current ratio (CR), Debt ratio (DR) calculated as total debt (TD) divided by total assets (TA), Tangibility as proportion of Net fixed assets to Total assets, Dividend tax rate, Tax liability of the companies in the current year and Interest expenses, have been used as explanatory variable and Dividend Payout Ratio (DPO) as explained variable (dependent variables) based on the earlier literature, has been tested. The specification of the model is:

\[
DPO_t = \alpha + \beta_1 DPO_{t-1} + \beta_2 Size_t + \beta_3 CR_t + \beta_4 DR_t + \beta_5 Tang_t + \beta_6 ROI_t + \beta_7 DIVTAX_t + \beta_8 TAX_t + \beta_9 INT_t + e
\]

Where

- \(DPO_t\) = Current year Dividend Payout Ratio
- \(DPO_{t-1}\) = Previous year Dividend Payout Ratio
- \(Size_t\) = Volume of Sales, measured as natural log of sales turnover in the current year
- \(CR_t\) = Current ratio in the current year
- \(DR_t\) = Debt ratio in the current year
- \(Tang_t\) = Tangibility in the current year calculated as Net fixed assets divided by Total assets
- \(ROI_t\) = Current year Return on Investment
- \(DIVTAX_t\) = Dividend tax rate in the current year
TAX_t = Corporate Tax payable for current year
INT_t = Current year Interest liability
e_t = error term.

The step-wise regression approach has been adopted to drop least significant variables and to get the best fitted model with highest coefficient of determination adjusted for degrees of freedom on dividend policy.

Finally, the non-linear estimation statistical technique called logistic regression has been applied for the model with dichotomous dependent variable and ordinal as well as continuous independent variables in order to evaluate the factors associated with dividend reductions / omissions in Indian companies. The dichotomous dependent variable is dividend reduction / omission with value '1' for reduction / omission and '0' for increase / initiation. The independent variables of interest in the model are cash position (Cash / TA) and owned capital (Shareholders’ Equity / Total Assets). To gain further insights and unique effect of above two primary independent variables on the likelihood of dividend reduction / omission from the analysis, Profitability, growth, liquidity, non-debt tax shield (tax) and interest expenses are also used as control variables in the independent set. The proxy for profitability, growth, liquidity, tax and interest expenses is Return on Assets (ROA), Three year growth in sales (SGR), Current Ratio (CR), Depreciation to Total Assets (DEP/TA) and Interest Expenses to Total Assets (INT/TA) respectively.

The specification of the logistic regression model is:

\[ DRO_t = \alpha + \beta_1 \frac{Cash}{TA_t} + \beta_2 \frac{TE}{TA_t} + \beta_3 ROA_t + \beta_4 ROA_{t-1} \]
\[ + \beta_5 SGR_t + \beta_6 CR_t + \beta_7 \frac{DEP}{TA_t} + \beta_9 INTEREST \frac{INT}{TA_t} + e \]

Where

\[ DRO_t \] = Dividend Reduction / Omission (‘1’ for Reduction / Omission and ‘0’ for Otherwise)
\[ CASH/TA_t \] = Cash Position scales by Total Assets


\[
\begin{align*}
TE / TA_t & = \text{Owners' Fund} \\
ROA_t & = \text{Return on Assets} \\
ROA_{t-1} & = \text{Return on Assets (Previous Year)} \\
SGR_t & = \text{Growth in sales over three years} \\
CR_t & = \text{Current Ratio (Liquidity position)} \\
DEP / TA_t & = \text{Depreciation to Total Assets (Non Debt Tax Shield)} \\
INT / TA_t & = \text{Interest liability} \\
\alpha & = \text{Intercept term} \\
\beta_1 \ldots \beta_9 & = \text{Estimated logit coefficients} \\
e_t & = \text{error term}.
\end{align*}
\]

1.8 DETERMINANTS OF DIVIDEND POLICY

Dividend decision in the corporate sector is governed by large number of determinants based on the earlier literatures disclose that profit, cash flow, lagged dividend, depreciation allowance, investment expenses, flow of external fund, cost of debt, changes in sales etc., are expected to have a direct bearing on the dividend policy decision of the companies. They are summarized as under:

Profits (PAT$_t$)

The rationale of profit after tax as a determinant of dividend policy is that it represents the capacity of the company to pay dividend in a particular year. Further, the level of profit is almost invariably the starting point in the management's consideration of whether dividend should be changed in any given year.

Cash Flow (FCF$_t$)

Everyone knows that paucity of free cash flows sometimes forced even otherwise profitable companies to skip dividends. It implies that the cash flow is an
important variable in the dividend decisions. The cash flow variable is derived from the earnings available for common shareholders plus depreciation expense of the concerned financial year.

**Lagged Dividend (DIV<sub>t-1</sub>)**

This variable is the cash dividends paid by the company one year prior to the year under consideration. The role of lagged dividend variable is to demonstrate the desire of management to follow stable dividend policy. In order to follow a stable dividend policy, management has to allow the past dividend trend to influence the current dividend payments.

**Depreciation Allowance (DEP<sub>t</sub>)**

Regulation and accounting practices regarding depreciation might affect dividend policy inversely through its impact on current net profits. This variable is included as an explanatory variable by number of researchers and they found this variable statistically significant.

**Changes in Sales (∆SAL)**

The likely effect of this variable on dividend policy is controversial. An increase in sales generates increased working capital requirement which in turn may adversely affect dividend payments. Similarly falling sales help support dividends by releasing funds from the working capital. In this study current year change in sales over preceding two years is included as a proxy for working capital requirement.

**Investment Demand (Tang)**

Net fixed assets divided by totals assets is used to capture the effect of tangibility on dividend policy of Indian firms. This is because investments in fixed assets for expansion purpose leave little out of profits to be paid to shareholders as dividends and these ratios to have a negative relationship with dividend policy.
Debt Ratio (DRt)

Another important determinant, which may be associated with dividend decision of a firm, is the debt ratio. The demand for external finance usually arises in a company on account of constrains imposed by its internal resources. When a firm has relatively high financial leverage, its dependence on external finance is increased, thus, has low dividend payout ratios.

Return on Investment (ROI)

The measure of profitability in our case is return on investments, which is calculated by dividing the net profits after taxes for the firm by the total assets. It is hypothesized as positively related to dividend payout ratio. It means when the return on investment increases the firm will pay more dividend.

Current Ratio (CRt)

For the purpose of examining the affect of liquidity, we used current ratio in the dividend model. A firm may have adequate earnings to declare dividends, but it may not have sufficient cash to pay the same. Thus liquidity position of the firm is an important consideration in paying dividends. The greater the cash position and overall liquidity position of a company, the greater its ability to pay dividend. The negative sign is expected for the liquidity against dividend pay out.

Size of the Firm (Size)

Size of firms based on volume of sales measured by log of sales, has an important contribution in explaining dividend policy of firms since larger firms have better access to market and able to pay higher dividends. It is postulated that higher revenue firms should have lower probability of bankruptcy, and, therefore, should be more likely to pay higher dividends.

Dividend Tax (DIVTAX)

In order to examine any change in dividend payouts due to dividend tax law, the dividend tax rate is used as explanatory variable. The tax-preference theory
proposed that companies should retain rather than distribute their income because of the preferential tax treatment of capital gains versus dividends. Based on the tax-preference argument, the association between dividend tax rate and dividends is anticipated to be negative.

**Corporate Tax (TAX_t)**

The taxation policy of the government affects the dividend decision of a firm. A high or low rate of business taxation affects the net earnings of the company and thereby dividend decision. More corporate tax leads to reduction in current year's profit and results to low dividend. It is assumed that there exist negative relationship between corporate tax and dividend payout ratio.

**Interest payment (INT_t)**

Another variable, which may have a direct bearing on the dividend policy of the firms, is the amount of interest. A rise in interest payment by a company would depress its dividend payment. Total interest expenses adjusted by total assets is considered as one of the explanatory variables for the present study.

### 1.9 LIMITATIONS OF THE STUDY

1. The present study is limited to one hundred and nineteen companies for a period of ten years only.
2. The present study is based on the sample drawn from ‘A’ group and ‘B’ group companies of Bombay Stock Exchange only.
3. For the present study, the required data of the sample companies is collected from “Capitaline Data Base”. Hence, the reliability of data is based on the accuracy of data in “Capitaline Data Base”.
4. The present study is undertaken only on 119 sample companies of 11 different industries. The findings of the study may not be applicable to other companies from other industries.
1. The present study is undertaken for a period of 10 years from 1997-98 to 2006-07. The findings of the study may not be applicable to the period prior to the study period.

1.10 CHAPTERS SCHEME

The first Chapter contains introduction, statement of the problem, review of previous studies, scope of the present study, objectives, hypotheses, research methodology, limitations of the study and chapter scheme.

The second chapter reviews the legal aspects of dividend policy in India.

The third chapter examines the profit dividend relationships and dividend payout ratios of sample companies in India.

The fourth chapter analyses the determinants of corporate dividend policy with the help of some known dividend models.

The fifth chapter examines the probability of dividend decrease/omission and increase/initiation by using logistic regression approach.

The last chapter summarises major findings of the study, conclusions and suggestions.