FINANCIAL INSTITUTIONAL HOLDING AND CORPORATE FINANCIAL BEHAVIOUR —AN EMPIRICAL STUDY

By

SAMIRENDRA NATH DHAR

A THESIS
SUBMITTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY (Arts)
TO THE
UNIVERSITY OF NORTH BENGAL

DEPARTMENT OF COMMERCE
UNIVERSITY OF NORTH BENGAL
1991

ACKNOWLEDGEMENTS

I wish to express here my deep indebtness to my teacher and guide, Dr. M.K. Roy, Department of Commerce, North Bengal University, who inspired me to pursue the study and offered valuable counsel and supervision throughout the course of the work. I also express my gratitude to the P.R.O., Industrial Development Bank of India, Bombay, and S.K. Choudhury, Senior Faculty Member, Management Development Institute, for furnishing me with valuable articles. I also thank the staff of the Computer Centre, N.B.U. for rendering computational assistance during the initial stages of the study. I also thank Prof. A. Pal, Vidhan Chandra Krishi Vishwavidyalaya, Coochbehar, for providing me facilities to use his computer system. This dissertation owes much to the typographical assistance ungrudgingly given by Atul Ray

This is an appropriate occasion to acknowledge the help and inspiration provided to me by my departmental teachers and colleauges. My heartfelt gratitude goes to D. Bhattacharya who read the manuscript and gave valuable suggestions and also to A.K. Ray for advising me during processing of data. It is also difficult to put down in words the debt I owe to M. Parkar, U.B.K.G. Bank, who encouraged, inspired, listned, and contributed much while the thesis was being written.

C O N T E N T S

(3) CHAPTER THREE

INSTITUTIONAL EQUITY HOLDING AND CORPORATE EFFICIENCY

AN UNIVARIATE ANALYSIS

CHAPTER FOUR

INSTITUTIONAL HOLDING -- ITS EFFECT ON CORPORATE PERFORMANCE

MULTIVARIATE ANALYSIS : STAGE 1

5) CHAPTER FIVE

COMPARISON OF CHARACTERISTICS OF FINANCIAL INSTITUTION OWNED

FIRMS AND OTHERS. MULTIVARIATE ANALYSIS : STAGE II

CHAPTER SIX

CONCLUSIONS AND POLICY IMPLICATIONS

****

PREFACE

The importance of an efficient financial system in the developement process of an economy is well recognised. The basic characteristics, objectives to be achieved and modus operandi of financial systems vary largely depending on the broad economic setting in which it operates. The Indian financial system essentially functions in an unique economic system, often referred to as a " mixed economy". Here it is largely dominated by the Government who considers it to be an effective tool for planned economic developement of the country. This characteristic of the the financial system inspired a host of researchers to conduct extensive studies in this area. A few of them are both interesting and thought provoking and can hardly escape the attention of serious researchers.

An important development, i.e., change in the power structure of private corporate sector in favour of Government controlled financial institutions drew considerable attention of all the keen observers of the capital market and inspired a number of researchers to review the present role of institutions in the private corporate sector. Unfortunately, by and large,these studies are not very deep - rooted, lack vigour and objectivity.

The present study adopts a different approach to resolve the debate on role of institutions in the private corporate sector. The study maintains the stand that the rise in institutional equity holding in the private corporate sector per se has little relevance unless it has any developmental implications. This study thus attempts to show efficiency consequences of increased investment of public financial institutions in the risk capital of corporations.

Based on the findings of the empirical analysis, the role of institutions in the private corporate sector has been defined accordingly.

The brief outline of the study is as follows;-

(i) Chapter One , to start with, deals with the task of efficient financial systems and the present condition of the Indian financial system . Next, the chapter examines in details how through the course of the years, financial institutions have acquired large volumes of shares in the private corporate sector. This chapter ends with the question as to whether the institutions can participate in corporate management directly by virtue of their large shareholdings.

(ii) Chapter two deals generally with the methodology of the study which encompassses description of the sample, the variables,and the time period of the study. Several hypotheses that are necessary for the study are drawn here; these hypotheses are based on managerial theories of the firm.

(iii) Chapter three uses both parametric and non-parametric ststistical tests to conduct the study on an univariate basis.

(iv) Chapters four and five are based on multivariate techniques. The former uses multiple regression analysis and the latter uses multiple discriminant analysis to test the effect of institutional holding on corporate financial behaviour'

(v) Finally, chapter six draws on the empirical findings to conclude the study and state the policy implications. This chapter also includes a discourse on the role of nominee directors and sugesstions as hon to improve the efficiency in private sector corporations.

Each chapter is further divided into several sections to discuss issues in their proper perspectives.

It is worthwhile to state here, that, though the scope of the study was considered to be quite wide yet it was felt that paucity of means might hinder the ends. During the course of the study problems like dearth of computational and other infrastructural facilities and absence of a data bank, were frequently encountered. up. However, in spite of these limitations attempts have been made to obtain reliable and valid results from the analyses in all the cases.In order to facilitate readability, and in order to avoid information overloading, details of the analyses, for example, list of discriminant score etc have not been appended with the treatise.

Finally, a work like this in a broad area and also involving a multidisciplinary approach is bound to suffer from a large number of lapses. No one is more conscious of them than myself. The reader will, I trust, treat them with a certain indulgence and bear with the short-comings. I shall consider myself amply honoured if this treatise stimulates deliberations and lead to more prolific research in this area.

28th June 1991

SAMIRENDRA NATH DHAR

DEPARTMENT OF COMMERCE

NORTH BENGAL UNIVERSITY.

LIST OF TABLES

CHAPTER ONE

FINANCIAL INSTITUTIONS

AND

PRIVATE CORPORATE SECTOR IN INDIA

1.1 *Introduction*

Over the past several years, a plethora of empirical studies have documented that savings, investment and growth of an economy are highly correlated. In fact, savings determine the rate at which productive capacity, and hence, income can grow. On an average, the more rapidly growing developing countries have had higher savings and investment rates than the slower growing countries.[See appendix-table 1] However, empirical studies also revealed that the vital factor influencing income levels, there by savings and investment is, how productively savings have been used, even more than how much was saved. This is reflected in the fact that during the last 25 years average gowth rate of developing countries have been more correlated with the productivity of investment than with the rate of investment.[1] The extent of efficient use of investible resources makes the biggest difference between rich and poor nations.[2] The financial systems contribution to growth lies precisely in it's ability to increase effeciency.

While attempting to develop a comprehensive definition of financial system, authors have duly emphasised its role as a keeper of efficiency. Such as, "the capital market of a modern economy has two basic economic functions, first, the allocation of a periods current savings among users and uses or the supply of financing for the periods' investment; second, the transfer of

existing assets, tangible and intangible, among individual groups, units, sectors and countries". [Goldsmith, 1965]. Thus apart from financing projects , the market has a role as transfer house that permits portfolio adjustment from inefficient units to efficient units. Robinson and Wrightsman's also maintain the same tune, "the two functions of financial markets are to provide a link between savings and investment for the creation of new wealth and permit portfolio adjustment in the composition of existing wealth." [Robinson & Wrightsman, 1974]. In an unequivocal term, here also the authors emphasised the importance of allocative function of the financial system. Capital markets continually transfer resources from inefficient or unprofitable units to units which are efficient or profitable. By this process, financial system assures best possible use of capital resources of the community and keeps a constant pressure on the users of funds to increase efficiency. Such a well planned financial system can serve as a tool in implementing developmental strategies and their synergestic effects are a *sin qua non* for a welfare state.

1.2 *Development of Financial System : Trend of Financing of Indian Industries : ------ a Brief Review.*

The close nexus between a well-developed financial system and economic growth was realised in India only after independence. It was felt, that a financial system overwhelmingly dominated by the Government could only ensure planned economic growth of our country and then the Reserve Bank of India was nationalised in 1948. The post 1950 period witnessed a series of transfers of privately owned financial intermediaries to public control. In the

year 1956, State Bank of India was formed by taking over Imperial Bank of India and the Life Insurance Corporation came into being formed by nationalising 245 private insurance Companies. Unit Trust of India came into existence in the year 1964 under the UTI Act 1963 and history witnessed another landmark event in 1969 when fourteen commercial banks were nationalised. Gradually fourteen more banks were nationalised increasing the number to twenty-eight. In 1972, the General Insurance Corporation of India was formed as a result of nationalisation of four general insurance companies and their amalgamation into a single organisation.

During this period, there was a simultaneous growth of a plethora of development banks as the backbone of the Indian financial system. The objective of incorporating these development banks was not only to povide long term finance to industries but also to act as active agents for promoting socio-economic development. The establishment of a chain of development banks started with the setting up of the IFCI in 1948. Later in 1951 , the Government of India enacted the State Financial Corporation Act, which came into effect in 1952, As a result of this, a battery of State Financial Corporations were established in different states. Again with the primary objective of assisting industrial investment in the private sector, the Industrial Credit and Investment Corporation of India was set up in the year 1955. In 1964, the Industrial Development Bank of India was set up to function as the apex body for co-ordinating the activites of the financial institutions, for providing finance to industries and for promoting developmental activities in backward areas and for looking after sick industries. Special attention was given to

rehabilitation of sick industries when the Industrial Reconstruction Bank of India (formerly IRCI) was established in 1971.

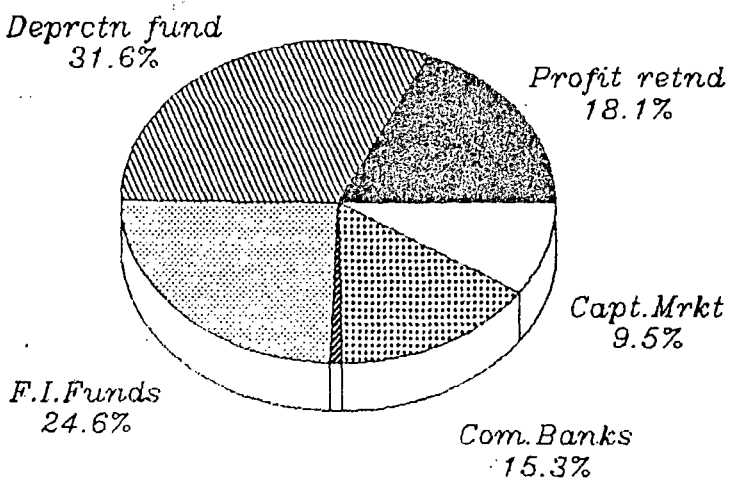
Thus in our country, the whole financial system is mainly dominated by the Government. However, apart from these Government controlled financial institutions, stock exchanges have been re-inforcing the financial system since the last century. After the setting up of the first stock exchange in 1887[3]. 15 stock exchanges hase been gradually instituted to date, to meet the growing needs of users. In addition to this, internal resources which include retained profits and depreciation funds were also used to finance Indian industries .

With these preliminary discussions on the Indian financial system, we shall study in the next section the trend of financing of Indian industries. This would show the relative importance of different sources financing and the role they can play to achive the objectives of the financial system.

1.2(a). *Trend of financing of Indian Industries*

The private corporate sector derives its funds from internal sources such as depreciation funds and retained profits and, also from external sources vide the issue of shares and debentures, deposits from public and assistance from financial institutions and commercial banks. The trend of corporate financing which has been envisaged by the Rangarajan committee[4] reveals very interesting information.

FINANCING OF TARGETED INVESTMENT OF PRIVATE CORPORATE SECTOR



PERIOD 1982 TO 1984-85

The diagram clearly reveals that private corporate sector's relieance on the financial system is only about half of their total investment requirements. Internal sources viz. depreciation funds and unapportioned profits supply the other vital half.[See appendix table II] Among the external sources the financial institutions together with the commercial banks shoulder 80% of the responsibility leaving the stock market to play a very insignificant role.

A critical analysis of the above trend of financing may unfold several serious issues which have significant relationship with the present discussion.

Though generation of half of the funds internally seems quite large, however it is not something to be happy or complacent about. Depreciation funds which account for about 64 per cent of internal sources are constantly used for replacement of worn out equipment and cannot be used for dilation and growth of the business. It is only 36% of the internal sources i.e., retained profits which help the companies in this respect.

A study of the financing pattern of corporate sector reveals that the gross fixed assets are mainly financed from internal sources and external sources consequently are being used for financing current assets only.[See appendix Table III]. It would be erroneous to match individual sources with uses of funds on the basis of aggregate data only. However, if only the retained profit is considered which is in all practical sense the actual funds that are available fo the expansion of the business then the average ratio between undistributed profits and fixed assets expansion averages to above 30% . The importance of internal

financing as an important sources of fund can also be observed in industrially developed countries. Gordon Donaldson's study based on U.S. industries shows that firms largely rely on self-finance and raise a small portion of their investible funds from the market.[Donaldson G, 1961]. Simon Kuznets, in another study, covering a period of more than fifty years indicated that in American industries, the amount of gross internal savings exceeded that of external sources of funds.[Kuznets. S. 1961].

Among the external sources the nominal role of the stock market also clearly emerges from the above study. The seventies witnessed a scene where only about 4 to 5 per cent of the fixed assets formation was financed by new issues.[See appendix Table III]. This was due to several causes like uncertainties of new issues, high transaction costs, random speculation and lack of good infrastructure. However, the position improved considerably from the early part of the eightees when new issues were able to provide about 13% of the financial resources of the corporate sector. This sudden improvement was due to various promotional and other measures taken by the government during the period.[5]

Under such conditions the government controlled financial institutions had to supplement the capital market for providing industrial finance. The magnitude of assistance sanctioned by the financial institutions vary from year to year depending on capital market conditions. It would be worthwhile to mention here that in the 50s an early 60s the bulk of resources, apart from internal savings came from the capital market which remained quite active. Since the middle of sixties the capital market was rather subdued and the corporate sector had to place heavy reliance on the funds

of financial institutions. Past trends reveal that 35 to 40 per cent[6] of new investments including inventories in the private sector had been financed by different govenment controlled financial institutions.

Tremendous support rendered to the corporate sector by all Indian financial institutions can be exonerated from the fact that there had been an average annual growth rate of sanctions of over twenty per cent. From a meagre Rs. 118 crores in 1964 the cumulative assistance sanctioned upto March 1987 has capered to a collossal of Rs. 40544.8 crores thus registering a growth of 34260 per cent in only 23 years.[See appendix - table IV] Out of this total the major portion was channelised to the private corporate sector. Recent trends show that about 75% of the funds were allotted for this sector against an allocation of only 15% to the public sector, 7% to the joint sector and the rest to the co-operative sector.[See Appendix Table V]

Thus, from the above discussions the following important points come to the limelight.

(i) Importance of internal sources of financing for the growth of the private corporate sector.

(ii) In general, insignificant role of he stock market.

(iii) Tremendous importance of government controlled financial institutions as suppliers of funds for the growth of the private corporate sector.

Very often, while evaluating the effectiveness of any financial system, its capacity to supply funds is overemphasised while undermining its role as a watch dog of efficiency. Thus oneof the basic ingredients of an efficient financial system gets out of

our sight. This is clear from the tendency to gauge the level of activity and the role of financial institutions in the development process of our economy, only on the basis of magnitude of funds supplied to the industries. This approach ignores the role of the finacial system as the "gaurdian of efficiency" [Baumol 1965] and it's developmental implications. In absence of an active stock market, financial institutions as major suppliers of funds has a definite role to play in this respect.

Efficient market allocation, or direct participation in management are the two alternatives available to financial institutions to ensure efficient utilisation of resources. Efficient market allocation of resources can be made by financial institutions through channelising funds to the efficient units only and denying inefficient units of financial resources. However, this requires this requires a constant re-shuffling of resources from inefficient to efficient units. If for any reason this practice cannot be applied, then productive use of funds can be ensured by the financial institutions through direct participation in the management of the corporations. Considering the multiple, some times conflicting objectives[7] that the government tries to pursue through finiancial institutions and also the existing condition of the stock market , it seems that the second approach, i.e. the intervention in the management is the easiest means to ensure efficiency. This would necessitate a critical analysis of the volume of equity holding of the private corporate sector by financial institutions.

This factor is important, because it is by virtue of this equity holding that financial institutions can become members

of boards and control and guide the corporations to ensure sound economic development.

1.3 *Equity Holding of Financial Institutions and Its Importance in the Corporate Power Structure*

The discussion in the previous section provides only an aggregate picture of the assistance granted to the corporate sector by the financial institutions. The major components of this assistance however are (i) rupee loans (ii) foreign currency loans and (iii) underwriting and direct subscription of corporate securities. Among the above three components the major portion of assistance is in the form of rupee loans, accounting for more than seventy-five per cent.[See Appendix Table VI] Underwriting and direct subscription occupied a large share in the sixties. Though the amount has decreased to about fifteen per cent of the total assistance in the eightees, yet it serves as a vital mode of assistance to the corporate sector. The underwriting operations of the financial institutions are consistent with their theoretical concept of developmental agencies. They have several times been affected by the depressions and booms in the capital market, but have always kept up their efforts to support new issues at times when other underwriters have disappointed the market. Other than this quantitative dimension in terms of rupees channelised for underwriting, this has another important qualitative dimension also. As M.Y. Khan puts it, "their participation lends prestige to the issues and conveys to the investor an implicit guarantee regarding the soundness of an issue."[Khan ,1983].

What has been the impact of such underwriting activities of the financial institutions? Recent studies show that all other categories of underwriters and direct subscribers have been outstripped by the financial institutions and that they have been contrieved into a near elephantine structure.[8] [Also see Appendix Table VII].

The cumulative effect of underwritng and subscription of equity share and convertible debentures, conversion of term loans to equity, frequent issue of right and bonus shares by companies have eventuated for a very interesting pattern of equity shareholding by the financial institutions. A steady rate of increase has been observed for the equity holdings of financial institutions acdompanied by a decline in the holdings of the individual. The following analysis will highlight the changes.

Table 1.3(a)

Trend in Ownership Pattern of Equity Shares of Private Sector Companies

(Percentage of paid up value of equity)

Category of owners	1959	1965	1978	1982	1986
Individuals	51.82	46.78	36.96	43.79	41.93
Financial Institutions	6.64	18.82	27.37	29.39	23.95
Govt.& Semi Govt Bodies	0.00	1.30	1.39	0.44	0.22
Joint Stock Companies	39.46	31.69	32.85	23.89	32.26
Trusts & Charitable Inst.	1.15	1.29	1.26	0.64	0.33
Others	0.93	0.12	0.17	1.85	1.31
Total	100	100	100	100	100

Notes :- i) Financial institutions include **IDBI,ICICI,IFCI,UTI,LICI,GICI,IRBI,Public** Sector commercial banks and other banks and also State Level Financial Institutions.

ii) For detailed break up of holding by financial institutions see **Appendix Table VII.**

SOURCE :- Compiled from (i) **RBI** Bulletin, February 1983, P. 91 and

(ii) **IDBI** Report on 'Ownership Patten of Shares and Debentures of Companies',1989,P. 7.

It is clear that the equity shareholding of corporate bodies by the financial institutions during the late fifties was very nominal and the individuals and joint stock companies were the primary shareholders. But, within a period of only six years, a noticable change was obseved. The percentage of equity shareholding by financial institutions increased three folds to 19% of the total. Simultaneously, the shares of individuals decreased by more

than 5%. The process of transfer of shares from the pockets of the individuals to the bags of the financial institutions became a regular feature thereafter. The rate of decrease of share ownership was of course much slower for individuals as compared to the high rate of growth of shareownership of the financial institutions.[9] There was a sudden break in the pattern of change in 1986 when there was a marginal fall in the shareownership of the institutions. It seems that continuing improvement in the activities of the stock markets since the begining of the eightees lured the investors and relieved institutions to some extent from equity financing of industries.

During this period intercorporate holdings or equity holdings by joint stock companies were observed to be above 30% throughout the period except for 1982 when it was only abont 24%.

A very recent survey conducted by the Economic Times of India also found that financial institutions have come to acquire large volume of equity shares of corporations. The study was based on 250 corporate giants and found the following pattern of shareholding.

Table 1.3(b)

Ownership Pattern of eguity share of 250 Corporations

Categories of Owners	Eguity Capital%
1. Resident promoters	21
2. Foreign Collaborators	17
3. Non-resident Indians	3
4. Financial Institutions	23
5. Public	36
	100

(SOURCE :- THE ECONOMIC TIMES, 16TH OCTOBER, 1989, P. VI.)

The table clearly shows that among the five categories of owners, excepting "public", who are mainly scattered and disorganinsed, financial institutions appeared as the biggest organised shareholding group. Further, studies conducted by Industrial Developement Bank of India and Economic Times show almost indentical percentage of equity holding by financial institutions. The study also shows that the top 50 companies with highet market capitalisation had an equity participation of 25% by financial institutions against 16.6% by residential promoters . The study group further reveals that the financial institutions have emerged as the single largest group of shareholders in as many as 61 Companies out of the 250 corporate giants.[10]

After such aggregative analysis, it becomes necessary to undertake a cross sectional analysis to ascertain industrywise equity holding and thereby capacity to control firms by institutions. The amount of equity ownership in most industries do not deviate significantly from the average. However large shareholdings by financial institutions are observed in electricity generation (56.69%), paper and paper products (40.52) and metal products (27.4%). Abnormally low shareholdings are noticed in Jute textiles (3.74), other textiles (13.07 and hotels and restaurants (2.37). The major portion of shares of hotels and textiles (more than 60%) are owned by the joint stock companies. It seems that the financial institutions emphasise more on capital intensive industries. However, in general, the institutions appear as major shareholders in nearly most of the industries. [See Appendix Table IX]

Another fact which may be of some interest to the readers is that the financial institutions, as compared to individual shareholders, hold more equity in new companies than in existing companies. This is clearly shown in the following table. This phenomenon may be due to the fact that individual shareholders are generally risk aversers in nature and do not venture for investments about which they are more or less ignorant. In such situations, it falls upon the financial institutions to back up new issues. These 'gap-filling activities' of the institutions is also a possible cause of rise of their equity holding.

Table 1.3(c)

Pattern of Shareholdin g of Individuals and Financial Institutions in N ew and Existing Companies

(Percentages)

	Year 1965		Year 1978		Year 1986	
	Existing	New	Existing	New	Existing	New
Individuals	47.25	26.34	37.60	32.86	34.12	43.33
F.I.	17.87	24.88	24.82	42.60	22.31	25.35

Note :- The reversal of trend in 1986 is due to the boom in the stock market in the eightees

SOURCE :- Compiled from (i) RBI Bulletin Feb. 1989, op. cit.

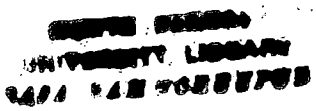
(ii) IDBI Report 1989, op. cit.

Normally, a large volume of equity shares in the hands of a group or individual bestows on them potential to control the company. Alternatively, if a company has a large equity base accompanied by a widely diffused group of shareholders the possibilities of control over the company by any such group becomes attenuated. However it is difficult to establish a relationship between control and volume of equity holding and also to mention

any specific cut- of rate in this regard. In general larger the voloume of holding, more is the possibility of getting control over the company. Thus in order to understand the relative importance of each category of investor in the corporate power structure, it would be necessary to have a discussion on the distribution pattern of equity holdings of financial institutions and individuals.

IDBI's study based on 575 sample companies in 1986, show that individuals held upto 25% shares in 25.74% [See Appendix Table X] of the companies but financial institutions held such shares in 63.65% of the companies. In another 151 companies (26.25%) the financial institutions held 25% to 50% of the equity shares. Share ownership above 50% by financial institutions were observed only in 58 (10.1%) companies. In contrast to this more than 50% shareholding by individuals were noticed in 215(37.39%) of the companies.

Though large volume of shares in majority of the companies were mostly under the control of individuals, the average concentration and size of holding were observed to be quite low. The analysis shows though more than 99 per cent of the total accounts were held by individuals it provided only 35 per cent of the aggregate capital and the of the sample firms average size of holdings was only Rs. 1,300. But financial institutions holding a very nominal number of accounts (0.0007%) provided as much as 23 per cent of the total capital, with an average size of more than Rs. 10 lakhs. It appears from the above discussion becomes evident from this is that the financial institutions having concentrated volumes of equity shares possess potential controlling power.



1.4 *Pattern of Financing :*

Change in Corporate Power Structure :

Role of Financial Institutions in the Private Corporate Sector

Some issues for discussion :

Now, we feel that, there is the necessity to put the whole disscussion made so far into a proper perspective. The impact of present trend of financing, change in the power structure of corporations have to be studied in the framework of it's developmental implications. Precisely, an attempt is made to study how this change may affect the efficient allocation of scarce financial resources.

The trend of financing of Indian industries clearly unveils the insignificant role of the stock market as supplier of funds. It can be said that the most important function of the stock market is to allocate the resources of the community to their most profitale uses. Apart from this task of efficient allocation of new investment resources, another vital task which the securities market may normally be expected to perform is to ensure the profitable use of exising resources. These allocative functions of the stock market are executed through pricing of corporate securities. By fixing higher prices to the securities or the corporation with higher prospective return on investment, and lower price to those corporate securities with lower expected return on investments, the market can assure that the more efficacious companies have inexpensive admittance to investible funds.

However, efficient allocation of investible resources through stock market requires that " equilibrium prices rule and relative share prices accuratly reflect the relative earning prospects of various firms". [Baumol, 1965]. Activities of

financial institutions viz. LICI, GICI and UTI have some disturbing effects on the efficient functioning of the stock market. The concentration of investible resources in their hands disallow the free interplay of different factors in determination of security prices. The collousus volume of funds commanded by them often have a disturbing effect on the market by altering the ordinary pattern of purchase and sales. This means that a sudden large purchase of equities of a corporation by financial institutions may result in an abnormal soaring of market value of those securities. Apart from this, there are numerous reasons that forces us to belive that the actual share market price is far from equilibrium . It obviously does not permit the stock market, in practice, to act as an efficient allocator of resources as has been envisaged by theoreticians.

Further, allocative functions of the stock market has been diluted to a great extent by the ever expanding volumes of funds supplied to the corporate sector by the financial institutions. However, there is the scope of rewriting the statement in the way, that in general an inactive stock market forces financial institutions to act as a saviour of the corporate sector. When the dependence of the corporations on the stock market is minimum, it looses it's significance as an "efficient allocator of resources" and "gaurdian of efficiency" [Baumol, 1965].

Again, inactive stock markets encourage firms to rely more on internal savings for growth and development. This is a laudable trend in developing countries. But in industrially developed countries where stock market is sufficiently active, there is also a deliberate attempt to generate bulk of funds

internally. Probably, the reason for this type of behaviour is probably, it allows firms to avoid stock market discipline. Thus, management enjoys wider discretion over the use of funds and take decisions with little regard to the stock market reactions.[11] However, in India, the fact is, either by articulation or under compulsive forces by relying more on internal sources, firms have been able to bypass capital market discipline to a large extent. Under such situation misutilisation of resources seems to be a possible outcome.

1.4(a) *Role of Financial Institutions in the Corporate Sector:- The present debate.*

In the context of the above discussions, the question that immediately comes to the surface is whether the present role pursued by public financial institutions, a major constituent of the Indian capital market is conducive to promote corporate efficiency ? If not, then how to redefine the role to make it more purposive.

Some argue that institutions must give up their present indifferent attitude to inculcate efficiency in the corporate sector. It is widely known that where management is free from all constraints, be it from the shareholders, stock market etc., inefficiency is the natural outcome. Public financial institutions, a dominant partner of Indian capital market, under these situations cannot shrug off their responsibility as " watch dog of efficiency. If they do so they will be failing to do justice to their roles as investors and developement agency. Normally these two roles converge into a single point that aim at efficient use of

scarce resources.

The argument roles in this manner; the investible funds of the financial institutions do actually belong to the public. As trustees of public money institutions have an obligation to ensure adequate returns on their funds. Once this obligation is bestowed on institutions it becomes imperative for them to bring about efficiency in firms where their funds have already been invested . Change in the power structure of corporations in favour of Government controlled financial institutions provides an excellent opportunity to inculcate element of efficiency in the corporations so as to protect the interests of the investors as well as the total economy. In fact various committeees including the much debated Dutta Committee [12] insisted that public financial institutions should progressively participate in management and control of assisted enterprises so as to ensure public interest.The views got further momentum in recently when the Prime Minister almost echoed the same feelings stating that we have a vast range of financial institutions through which indirect controls, can in principle be exercised for the management of the industrial sector in a purposive manner.

Further, the present state of relationship between owner and manager of Indian corporations further reinforces the need for vigilant attitude of institutions towards corporate management. One of the peculiarities of the Indian companies is, in contrast to the high proportion of shareholding of the financial institutions, the shareholding of the groups or families actually administering the companies is very negligible. [Gupta 1984]. Indifferent attitude of institutions along with their almost

unconditional tacit support to the promoters, permits management with little shareholding to enjoy actual control over the firm. Present boards can never be characterised as " owner manager" , at best they can be described as "controller manager". [Marris, 1964]. If there is a separation of ownership from management, the presence of different vices associated with it cannot be ruled out.

This of course has a close resemblance with the seenerio in industrially developed countries where about two per cent equities belong to the board.[Marris, 1964]. However since financial institutions in those countries belong to the private sector and shares are widely dispersed among various insurance companies, investment trusts, housing societies and banks, concerted voting efforts are usually absent. Thus management with nominal equity holding remain free from shareholders influence and execure effective control over corporations. But, financial institutions through continous reshuffling of their portfolios and channelising their funds to more lucrative projects, play an indirect role to discipline management. Through this process institutions discharge their allocative functions and indirectly pressurise management to improve efficiency. In contrast to the developed countries, in India, owners are unwilling (not incapable) to exert any influence on management and incapable of imposing any direct control on them.Thus there is greater posssibility of careless use of resources by Indian management.

However, counter arguements supporting managerial autonomy is not devoid of any logic. It is always stressed that, financial institutions as development agencies of the government have the responsibility to monitor the affairs of the economic

system in consonance with the strategic policies of the state. This implies, that in India, financial institutions should not interfere in the co-exixtence and harmonised functioning of the public and private sectors. This direct participation of financial institutions in private sector may go against the very essence of mixed economy. It is strongly supported that any undue interference of the government in the management of corporate sector contrdicts the philosophy of a mixed economy. Memorandum submitted by F.I.C.C.I. to Narasimham Committee emphasises on "independence of management","competitive efficiency" and "protection against any move to " destabilise existing management". Practically, while dealing with the issue of the role of nominee directors, the memorandum concludes that already there is enough monitoring on corporations by government agencies, and financial institutions should not duplicate their functions. The arguement goes further to say that the existing controls and regulations should be reviewed and the normal laws of Economics should be allowed to operate.

Further, utter failure of different controls and their counter-productive results are frequently cited to prove ineffectiveness of Government interference in the corporate sector. Thus, it is argued that, involvement of the Government in the management of corporations, instead of improving will be instrumental for accelerated deterioration of the efficiency of the firm.

However, the debate on role of institutions in the corporate sector is always on the anvil and there is an incessant point-counterpoint rally. The root of this debate is imbedded in

the basic philosophy of mixed economy. Arguments and counter arguments are largely overshadowed by ideological bias, either upholding the need for Government control or emphasising on the potentials of the market mechanisms for efficient use of resources. In view of these conflicting assertions, it is felt that this debate is to be resolved on the basis of some objective criteria and therefore the present study is in this direction.

Various constituents of a financial system in their own way atttempt to satisfy the objectives of raising and allocating funds. Through their co-ordinated efforts does ultimately an efficient financial system emerge. Continous reshuffling of portfolio and therby channelising of funds to their most profitable use , are the practices very often followed by the institutions of developed countries to discipline management. Thanks to various constraints within which Indian institutions have to function, these functions have little relevance in India ! But institutions' unquestionable importance in the corporate power structure bestows on them the right to control and thereby discipline existing management. But the debate remains open whether there is any justification for public financial institutions to exercise this right ? If yes, then to what extent should exert themselves ? The answers to the above questions depend on how efficiently "controller managers" use the funds of the real owners and this will ultimately decide the behaviour of the owners towards the "controller managers" of the corporations.

Thus we shall specifically seek answers to the following queries:-

(a) Can financial institutional equity holding affect the

financial behaviour of private sector corporations ? If so, then to what extent ?

(b) Can financial behaviour of corporations where institutions hold large equities be discriminated from that of those where individual or group ownership is large ?

Before providing answers to these questions, it would be rational to examine what economic goals "owner managers" and "controller managers" distinctly try to pursue.

****

NOTES (CHAPTER ONE)

1) The correlation co-efficient between the average rate of growth rate of GDP between 1965 and 1987 for developing countries and comparable data for the ratio of Gross Domestic Investment to GDP is 0.36. The correlation Co-efficient for the same countries over the same period between GDP growth and IOCR (the rate of GDP growth to investment) is 0.84.

"Historically, the quality of investment has been at least as important to growth as quantity. Although the fastest growing countries had higher rates of investment than the others (see appendix I) empirical studies generally find that less than half the growth in ouput is attributable to increases in labour and capital. Higher productivity explains the rest. Higher labour productivity reflects better health,skills,education and work effort; higher capital productivity reflects technical progress and more efficient use of savings" [World Development Report 1989,PP 29-30]

2) It is a fact that the quantity of resources have not always determined wealth. In 1870, Australia, a country rich in natural resources, had twice the per capita income of Switzerland ; to day Switzerland's per capita income exceeds Australia's by more than half. During the past thre decades Hong Kong, Japan, the Republic of Korea, and Singapore have had among the world's highest per capita income growth rates despite their relatively poor resource endowments. Resource rich Argentina has hardly grown at all.

[World Development Report 1989]

3) The first stock exchange i.e.'The Native Share and Stock Brokers Association', was founded in Bombay in the year 1887 to facilitate negotiation, purchase and sale of securities. Gradually other

stock exchanges were instituted at Ahmedabad (1894). Calcutta (1908), and Madras (1937). he next five decades witnessed a mushroom growth of these organisations and today there are 15 stock exchanges recognised under the Securities Contract (Regulation) Act 1957.

4) This study group was appointed by the Planning Commission under the Chairmanship of C.Rangarajan. Deputy Governor, RBI to examine factors influencing corporate investment and suggest how the private corporate sector can fulfil the desired level of investment as contemplated in the 6th plan. The report was submitted in 1982, November. (See Appendix Table I.)

5) The promotional measures by the government included (i) rationalisation and modification of personal and corporate tax laws (ii) delicensing of twenty five industries (iii) raising interest rates of debentures of non MRTP and non FERA companies from 13.5 to 15 percent (iv) raising the assets ceiling of MRTP companies from Rs. 20 crores to Rs. 100 crores (v) setting up of the Securities Exchange Board of India, etc.

6) Government controlled financial institutions supplied about 35 to 40 of the new investments of the private corporate sector.

[**SOURCE** :- Memorandum to Narasimham Committee, **FICCI, P.5**]

7) Such objectives may be :- (i) Ensuring adequate returns on the funds supplied by the institutions, (ii) Amelioration of sick units, (iii) Discouraging concentration of economic power and wealth, (iv) Disciplining erring management, (v) Providing cheap sources of capital etc.

8) Among the many financial institutions in India, a high concentration of activity in the area of underwriting and direct

subscription was noticed for Life Insurance Corporation, General Insurance Corporation and Unit Trust of India. Out of the total equity holding by all financial institutions, LICI,GICI, and UTI occupied 66% and 48% in the years 1978 and 1986 respectively. Even in 1978, the shareholding of all public sector commercial banks and all state level financial institutions were less than that of LICI. Undoubtedly, these three organisations have been the leaders in accelerating the pace of equity acquisitions.

9) The annual growth rate of equity share ownership of corporation by financial institutions were 11.14% for the period 1959 to 1986. During the same period equity share ownership by individuals declined at an annual average rate of 0.78%.

10) The pattern of share ownership with an increasing bias towards institutional investors is prevalent not only in India but in other contries also. The ownership patterns of U.K., Japan, and U.S.A. provide suitable examples.

Ownership patterns of shares-

International Comparison (% of equity holding)

	Japan		U.K.			U.S.A.		
	1950	1978	1960	1975	1980	1965	1970	1975
Individuals	61.0	31.1	54.0	37.5	35.0	51.7	64.1	52.7
F.Institutions	12.5	36.5	28.4	26.3	31.0	15.0	11.9	14.7

SOURCES :- Compiled for RBI Bulletin 1989

The shift of equity shares from the individuals to the financial institutions is also a notable feature there. However this shift is not very prominent in U.S.A. The difference from the Indian scenario is that the financial institutions belong to

the public sector whereas in the other countries the financial intermediaries mainly belong to the private sector and have a close nexus with industrial houses.

11) According to Ajit Singh in U.S. there are a large number of quoted firms which rely almost on self-finance and for which finance is of negligible importance . These firms are clearly able to survive despite the stock market pricing process, although it could be argued that their growth would be limited relative to the firm which do make use of external finance.

[Ajit Singh, 1971, p-4]

12) Industrial Licensing Policy Enquiry Report,1969, New Delhi, Paras- 2, 17:7, 90 and 8:18.

==========

REFERENCES (CHAPTER ONE)

(i) *Baumol, W.J.*, 'The stock market and economic efficiency' New York, 1965.

(ii) *Donaldson, Gordon*, 'Corporat Debt Capacity', Boston, 1961.

(iii) *Economic Advisory Council*- first report 'Indian Economy:vita Urgent Issues' Mainstream, June-11, 1983

(iv) *Gupta, L.C.*, 'Institutional Equity Holding and Corporate Control The Economic Times of India, April-16, 1984

(v) *Goldsmith, R.W.*, 'The flow of funds in the post war economy 1965.

(vi) *Khan, M.Y.*, 'Indian Financial system, Theory and Practice', 198

(vii) *Kuznets, Simon*, 'Capital in the American Economy. It formation and financing Princeton University Press, 1961.

(viii) *Marris, Robins* , "The Economic Theory of Manageria Capitalism.", Macmillan, London, 1964.

(ix) *Robinson, R.I. and Wrightsman, D.* 'Financial markets :- The Accumulation and allocation of wealth' 1974.

(x) *Singh, Ajit.*, "Take-overs- Their relevance to the Stock Market and Theory of the Firm.", Cambridge University Press, 197

==========

APPENDIX (CHAPTER ONE)

TABLE 1

Savings and growth in developing countries, 1965 to 1987

Country group by GDP growth rate	Gross national savings/GDP	Gross investment /GDP	Change in inv/GDP	M2/GDP
[High growth-over 7%]				
Seven Countries	28.0	28.6	26.3	43.0
Excluding China	23.2	26.7	33.1	--
[Medium growth-3-7%]				
Fifty one Countries	18.5	22.6	23.6	31.2
[Low growth-less than 3%]				
Twenty two Countries	19.0	19.0	10.1	23.8

Notes for the table :- (a) Data are weighted average times 100 and are based on a sample of eighty developing countries. M2 is currency in circulation plus demand, time, and savings deposits at banks. Investment is gross domestic investment. (b) Because of lack of data, average is for 1977-87 only.

SOURCE :- IMF, International Financial Statistics, and World Bank Data

(adapted from World Development Report, 1989. The World Bank)

TABLE II

Financing of Targeted Investment by Private Corporate Sector during 1982-83 to 1984-85

	Rs. crores		Percent of total	
(1) Targeted investment	16,085		93.43	
(2) Sources of Financing				
(a) Internal		8,639		50.18
(i) Depreciation	5,490		31.89	
(ii) Retained profits	3,149		18.29	
(b) External		8,577		49.82
(i) Financial institutions (including SFCs)	4,205		24.42	
(ii) Government	60		0.35	
(iii) Banks (short term)	2,662		15.46	
(iv) Capital market	1,650		9.38	
		17,216		100.00

SOURCE : Vinay D. Lall "Financing of Private Corporate Sector-An Assesment of Expert Study Group's Report" Economic and Political Weekly ,August 6 , 1988.

Table III

Financing of gross fixed assets of corporate sector by retained profits and new issues [a detailed break up] (Rs. '000)

	1.	2		3		4	
Years	G.F.A.E.	G.I.E.	(2/1)%	R.P.	(3/1)%	N.E.	(4/1)%
1971-72	37808	39866	105.44	12280	32.32	2492	6.59
1974-75	69094	65061	94.16	30021	43.44	2895	4.19
1977-78	75366	46083	61.16	5067	6.72	2863	4.20
1980-81	151200	104203	68.91	43200	28.57	2912	1.93
1981-82	173474	112322	64.74	36720	21.16	7833	4.51
1982-83	190462	114560	60.14	32433	17.02	11566	6.07
1983-84	198154	117622	59.36	34304	17.31	23513	11.86
1984-85	241434	166384	68.91	51741	21.93	10841	4.49
1985-86	271541	201588	74.23	72195	26.58	34362	12.65
1986-87	310493	178068	57.35	51101	16.46	40053	12.89

NOTE :- G.F.A.E denotes Gross Fixed asset Expenditure, G.I.E. denotes Gross Internal savings, R.P. denotes Retained Profits, N.E. denotes New Issues

SOURCE :- Compiled from various issues of RBI Bulletin : Finance of medium and large public limited companies.

Table IV

Assistance sanctioned by financial institutions

Year	Sanction (Rs. crores)	Annual rate of growth
1964-65	118.1	11.57%
1970-71	254.2	20.59%
1975-76	648.3	31.25%
1980-81	2525.8	8.79%
1981-82	2746.8	17.65%
1982-83	3231.7	27.35%
1983-84	4115.6	37.22%
1984-85	5647.6	-----
1985-86	6613.1	17.09%
1986-87	8157.2	23.33%
cumulative upto March 87	40544.8	------

NOTE :- Average annual rate of growth from 1964 to 87--20.22%

SOURCE :- IDBI Report on Development Banking in India 1986-87

Table V

Sector wise assistance sanctioned by financial institutions (Rs. crores)

Year	Public	Joint	Co-operative	Private	Total
1984-85	668.0	363.9	95.3	4203.5	5330.7
	(12.53)	(6.42)	(1.78)	(78.85)	(100.00)
1985-86	1235.7	411.2	157.8	4604.8	6409.1
	(19.27)	(6.42)	(2.46)	(71.85)	(100.00)
1986-87	1256.7	675.1	152.0	5727.9	7811.7
	(16.08)	(8.64)	(1.95)	(73.32)	(100.00)
Cumulative upto March 1987	5632.1	3001.3	1281.9	29487.1	39402.9
	(14.29)	(7.62)	(3.25)	(74.83)	(100.00)

NOTE :- Figure in bracket indicate percentages.

SOURCE :- IDBI Rport on Development Banking **1986-87**

Table VI

Component wise assistance sanctioned by Financial Institutions. (Rs.Crores

Year	Rupee loans	Foreign currency loans	Underwriting direct subscription guarantees	Total
1964-65	77.4	-----	38.7	116.1
	(66.66)	-----	(33.34)	(100)
1970-71	227.00	53.40	30.78	311.18
	(72.94)	(17.16)	(9.90)	(100.00)
1981-82	2394.98	153.53	416.48	2964.99
	(80.77)	(5.17)	(14.06)	(100.00)
1984-85	4335.4	334.9	977.30	5647.6
	(76.76)	(5.94)	(17.30)	(100.00
1985-86	5032.8	463.8	1116.5	6613.1
	(76.10)	(7.02)	(16.88)	(100.00
1986-87	6143.1	829.8	1184.3	8157.2
	(75.30)	(10.5)	(14.52)	

NOTE :- (Fugures in brackets indicate percentages)

SOURCE :- (i) **IDBI** Operational report for various years.
(ii) **IDBI** Report on Development Banking **1986-87.**
(iii) **RBI** Reports on currency and finance.

Table VII

Ownership pattern of corporate securities (1986)

(Percentages of paid up value of holdings)

Category	Equity shares	Preference	Debenturce	Cnvertible Debenturce
1. Idividuals	41.93	15.14	30.33	54.11
2. Financial Inst.	23.95	72.93	62.66	36.19
3. Govt.& semi Govt.	0.22	3.10	0.43	0.00
4. Joint stock Comp.	32.26	6.19	3.07	8.08
5. Trusts & Charitable Institutions	0.33	0.30	2.13	0.15
6. Others	1.31	2.34	1.78	1.47
	100.00	100.00	100.00	100.00

SOURCE :- Compiled from **IDBI** Report on Ownership pattern of shares an debentures of Companies (abridged and rearranged)

Table VIII

Ownership pattern of equity shares of private corporate sector by Financia Institutions (Percentages of paid up value)

Category	1978	% to total	1986	% to total
IDBI	1.06	3.87	3.73	15.57
ICICI	0.49	1.80	0.97	4.05
IFCI	0.50	1.83	1.01	4.22
IRBI	0.00	0.00	0.00	0.00
UTI	4.90	17.90	3.92	16.37
LIC	7.76	28.36	4.10	17.11
GIC	5.52	20.16	3.54	14.78
Others	7.14	26.08	5.13	21.40
Total	27.37	100.00	23.95	100.00

NOTES :- Others include (i) Public sector commercial Banks and other Banks
(ii) State level Financial Institutitons.

SOURCE :- Compiled from (i) **RBI** Bulletin, Bebruay 1989.
(ii) **IDBI** Report ibid table 1989.
[re-arranged and abridged]

Table IX

Industry-wise Ownership pattern of equity shares (per cent)

Category of ownership		Financial Inst.	Industrials	Govt. bodies	Joint stock Companies	Other	Total
Industry groups	Ranks	Holdings					
E.G.	1	56.69	41.46	0.60	0.00	1.25	100
P.& P.P.	2	40.52	23.95	22.95	13.33	0.11	100
B.M.& A.	3	27.42	46.70	0.00	15.85	10.03	100
R.& R. P.	4	27.02	37.56	1.05	34.13	0.24	100
N.M.M.P.	5	25.68	43.75	10.94	19.67	0.14	100
TEXTILES	6	24.39	40.88	6.75	27.13	0.85	100
M.O.T.E	7	22.87	38.87	0.94	36.19	1.73	100
E .M.	8	22.84	38.30	6.23	31.46	1.77	100
C . P.	9	22.76	34.90	10.39	29.48	2.47	100
L.& L.P	10	20.23	26.20	25.00	0.90	27.07	100
MISCELL	11	20.22	46.60	5.75	27.30	0.13	100
T .E	12	19.50	41.24	2.43	36.43	0.13	100
B.M.& A	13	17.93	27.06	38.87	14.98	1.16	100
MUL. PR	14	17.45	29.43	30.82	21.69	0.61	100
M. F.P	15	16.22	46.77	8.44	28.64	0.33	100
O.T.	16	13.07	24.43	0.00	62.50	0.00	100
J.T.	17	3.74	9.44	65.42	21.03	0.37	100
H & R	18	2.37	36.50	0.00	61.13	0.00	100

NOTES:-E. G. denotes Electricity Generation , **P&PP** denotes Paper and Paper Products ,**BM&A** denotes Basic Metals and Alloys, **R&RP** denotes Rubber & Rubber Products , **NMNP**- Non Mettalic Mineral Products , **MOTE**- Machinery other than Electricals ,**EM**- Electrical Machinery , **CP**- Chemical Products ,**L&LP**-Leather and Leather Products ,**TE**- Transport Equipment ,**BM&A**- Basic Metals & alloys **MUL. PR**- Multi Products ,**MFP**- Manufacture of Food Products ,**OT**- Other Textiles **JT**- Jute Textiles ,**H&R**- Hotels and Resturants.

SOURCE :- **IDBI** Report on Ownership Pattern of Shares and Debentures Companies . **1989** (Rearranged)

Table X

Distribution of companies according to size of individual equity holdings and institutional equity holdings

		Range				N.A.	PV	AV
		Upto 25%	25%-40%	40%-50%	> 50%			
I N D	No of companies	148 (25.74)	122 (21.22)	90 (15.65)	215 (37.39	7593213 (99.54)	986.4 (35.79)	0.013
F I	No of companies	366 (63.65)	101 (17.56)	50 (8.69)	58 (10.10)	5893 (0.0007)	623.2 (22.62)	10.57

Notes:- I N D denotes Individuals , F I denotes Financial Institutions

N. A. - Number of Accounts , P. V. -Paid up value (Rs. crores)

A. V. -Average size (Rs. Lakhs)

Total number of companies in the sample 575 ,

Total number of accounts - 7628598

Total paid up value of holding (Rs. crores) - 2755.48

Figures in brackets denote percentages.

SOURCE :- Compiled from IDBI Report on Ownership Pattern of Shares and Debentures of Companies 1989 (Abridged and Rearranged)

CHAPTER TWO

THEORIES OF THE FIRM , VARIABLES, SAMPLE, TIME PERIOD AND OBJECTIVE OF THE STUDY

2.1 *Introduction.*

A study of the efficiency of the firm with respect to degree of equity holding by financial institutions require that the proper objectives of the firm be identified . This will to a large extent help in selecting the variables necessary for establishing various performance indicators. However theories defining objectives of the firm are in many cases conflicting and contradictory, thus making the task of variable selection somewhat difficult. But it is not the objective of this study to form opinions for or against any theory. Discussion on these theories are necessary only to establish a conceptual framework about the various goals that firms tend to achieve.

The main focus of the present study is - whether corporate financial behaviour is in any way related with institutional equity holding ? Before entering into the main theme directly, we believe that some basic issues having significant relevance to the study be discussed. Thus the issues that have been cosidered in the present chapter are :-

(i) How to define and categorise firms having high and low institutional holding ?

(ii) Is there any specific goal that firms try to achieve , and does this goal change with rise in institutional equity holding ?

(iii) Which variables are to be selected for measuring

performance of the firms ?

2.2 *Theories of the firm*

The assumption that profit maximisation is the primary objective of the firm is a cornerstone of the traditional theory. The justification for this assumption is two-fold. One, the firm in the traditional theory is not identified separately with the entrepreneur or the owner manager, who takes the risks, formulates the plans, takes the decisions and receives the rewards. Since the owner-manager is in complete control of the firm his introspective motivation to maximise profits becomes the objective of the firm. Secondly traditional theory of the firm was extended to analyse the behaviour of the firm in imperfect or monopolistic competitive environment and was subsequently applied primarily to perfect competition. In competitive markets since profit is a survival crieterion, profit maximisation becomes an objecive necessity irrespective of the subjective motivation of the entrepreneur.

However, the theory of the objectives of the firm has been greatly influenced by the concept of managerialism, specially after the publication of the seminal work of Berle & Means (1932). There has been a proliferation of managerial theories and though these differ in details, yet they highlight a common logical texture. These theories are built on three assumptions :-

(i) There is a separation of ownership from control

(ii) There is a divorce of interest betweening the 'owning shareholders' and the 'non owning but controlling managers'

(iii) Firms operate in an environment which allows them some space of discretion in their behaviour. This means that managers are not bound by the external environment and the influence of widely dispersed shareholders but possess the option to pursue their distinct objectives.

The essence of these theories may be summed up by the statement that managers are induced by the pursuance of security, status, salary, power, prestige and vocational excellence. These in turn are clearly related to company characteristics such as size or growth rate rather than to profitability. Three well established alternative suggesstions to profit-maximisation as the objective of the firm are (a) Baumol's sales maximisation model subject to a profit constraint, (b) Marris's growth maximisation conceptsubject to a security constraint and (c) Williamson's maximisation of a generalised managerial utility function subject to a profit constraint. These constraints which limit the discretion of the managers are necessary to (i) earn a minimum level of profit required for giving satisfactory dividends to shareholders (ii) undertake the investment necessary for satisfactory operation of the firm (iii) keep a good reputation with the banks (iv) avoid fall in market value of shares and risk of take overs etc. If these conditions are not satisfied the top management runs the risk of dismissal. However so long as these condition are fulfilled the managers can follow policies to maximise their welfare.

A brief review of these three managerial theories would be helpful for an understanding of their distinct philosphies.

(1) Baumol's Sales Maximisation Hypothesis

Baumol's [1957] experience as a consultant to large firm

inspired him to find out that managers are more preoccupied with maximisation of sales rather than profits. Some reasons seem to explain such behaviour of managers :-

(i) Salaries and other perquisites of managers have a closer dependence on sales rather than on profit.

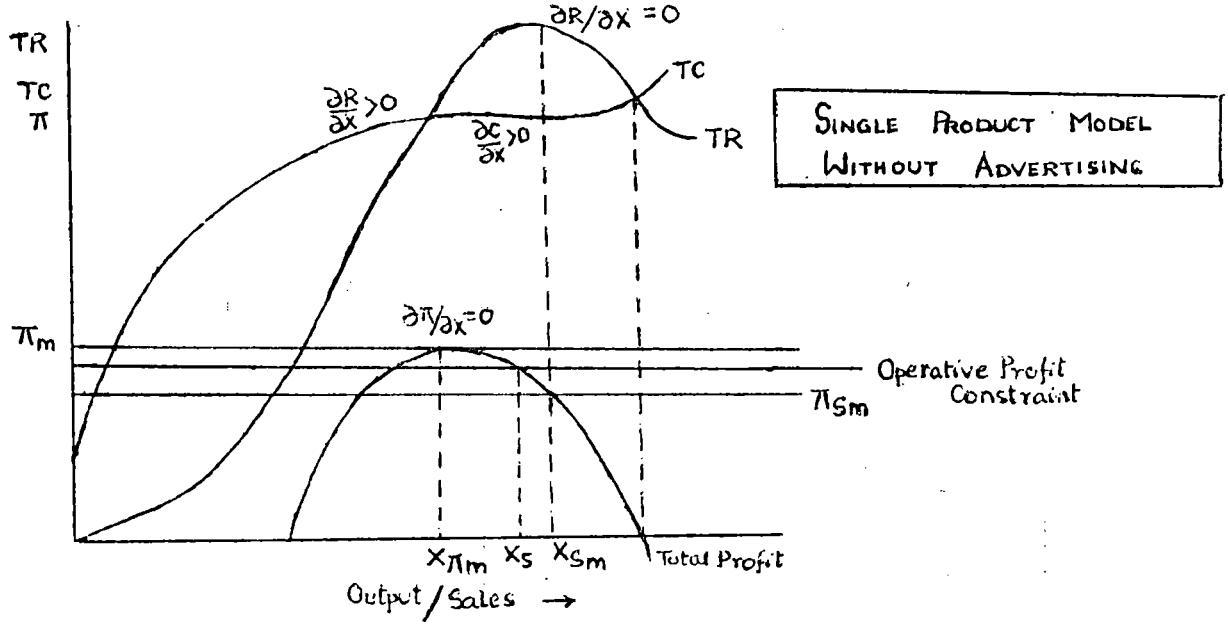
(ii) Personal problems are dealt with better craftsmanship when sales are growing, because this promises higher earnings in terms of bonus and commission and also better terms of work.

(iii) Large sales which grow over time add to the reputation and prestige of the mangers, whereas large profits are only pocketed by the shareholders.

(iv) Steady performance of the firm with adequate profit are more preferred by the managers than accepting project with booming returns and glooming risks.

(v) Large sales with a big share of the market enables the firm to launch competitive strategies, but small market shares lowers the competitive powers.

The following diagram illustrates Baumol's theory.



Here the sales maximisation level of ouput (X_{sm}) is at that level where the elasticity of demand is unity and marginal revenue is zero ($\delta R/\delta X = 0$). This is in contrast with the profit maximising level of ouput at which marginal revenue is equal to marginal cost ($\delta R/\delta X = \delta C/\delta X$). If marginal cost is greater than zero then at profit maximising ouput level marginal revenue will also be greater than zero, hence given that marginal revenue falls as ouput increases the profit maximising ouput ($X_{\pi m}$) will be smaller than the sales maximising ouput. Now if the profit constraint is introduced, then two types of equilibrium positions are possible. First if the sales maximising level profit (Π_{sm}) are higher than the constraint, then the constraint becomes non-operative and the firm can sell X_{sm} . But if Π_{sm} is lower than the constraint, then sales will have to be lowered to X_s so as to meet the constraint. However when maximum profits satisfy the constraint the difference between profit maximising and profit constrained sales maximising levels of output will vanish. Baumol argues that unconstrained equilibrium position will not occur normally. This is because of advertising expenditure which can increase sales physically, although at a diminishing rate beyond a certain level.

(2) Marris's Model of the managerial enterprise.

According to Marris [1964] maximisation of the balanced rate of growth of the firm is the goal of the firm . This means that the firm tries to maximise the rate of growth of demand for the products of the firm and of the growth of its capital supply :-

Maximise G = Go = Gc

where G = balanced growth rate

Go = growth of demand for the products of the firm

Gc = growth of the supply of capital

The rationalisation of this goal is that utility of the managers as well as the utility of the owner-shareholders are maximised by jointly maximising Go and Gc : Here the utility functions of the managers may be stated as :-

U_M = f(job security, salary, status, power) and the utility function of the owners as :

U_O = f* (profits, capital, market share, esteem).

According to Marris, these variables have a significantly large relationship with size of the firm. Size can be explicitly measured by (i) capital (ii) output (iii) revenue and (iv) market share. Economists are never unanimous about which of these measures are most appropriate. Further, Marris argues that the managers do not maximise the absolute size of the firm, but the rate of growth (i.e. change of size) of the firm.

Marris's model initially incorporates two constraints : (a) Managerial team constraint and (b) Financial constraint - or a job security constraint. According to the first constraint there is a ceiling on the growth of the firm set by the capacity of its managerial team. Hiring of new managers can increase the mangerial capacity, but there is also a limit to which the management team can expand and remain competent. According to the second constraint managers desire job security. They attain this job security by adopting judicuous financial policies. The hazard of loosing their

jobs or demotion arises if these policies lead the firm towards financial failure or make it prone to take overs. The risk of dismissal is dissolved by (a) choosing projects with steady performance than projects with high risk-return (b) choosing a 'pruduent financial policy' or deciding upon a 'financial security constraint' (denoted by $\bar{a}$). This '$\bar{a}$ is a weighted average of three crucial financial ratios. They are :-

(a) Liquidity ratio = Liquid asset/Total asset(a_1)

(b) Leverage or Debt

Equity Ratio = Value of debts/Total asset(a_2)

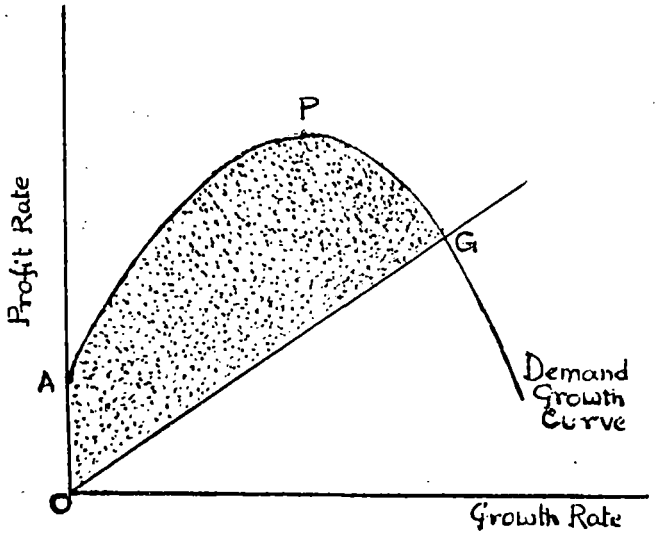
(c) Retention ratio = Retained profits/Total profits(a_3)

According to Marris $\bar{a}$ is negatively related to a_1 and positively to a_2 and a_3 . This means that if the security constraint increases either the liquidity is reduced or the debt equity ratio is increased by increasing external loans, or proportion of retained profits is increased. Again a high value of $\bar{a}$ implies that the mangaers are adventurous while a low value of $\bar{a}$ shows that managers are risk avoiders. This means that job security is positively related with liquidity ratio and negatively with leverage and retention ratio.

Now without going into details as to how equilibrium of a firm is attained, it can be stated that Marris argued that in equilibrium position profit and growth are not competing goals. This means :- $g_c = \bar{a}\ (\ \pi\ )$, and implies that higher profit means higher growth so long as $\bar{a}$ is allowed to vary, then profits and growth become competing goals. If profit is significantly low and inadequate to satisfy the shareholders' demand for dividends, the manager will have to reduce the retention ratio, i.e reduce $\bar{a}$.

The firm will then come to an equlibrium position with a smaller $\bar{a}$ and will yield a lower growth rate and higher profit level. This explains that under some situations manager's objective for higher growth and shareholders' objective for higher profit may conflict. Since $\bar{a}$ can be varied to to yield a certain amount of profit , it implies that managers seek to maximise the growth rate subject to a minimum profit constraint.

Radice [1971] also has developed a diagrammatic exposition which incorporates the essential structural relationships of a simple steady state Marris-type model.



The demand growth curve in the diagram portrays the way in which the rate of profit is assumed to grow as the growth rate increases. At low growth rates an increase in the rate of growth causes the rate of profit to rise; above a certain growth rate,due to diseconomies of scale, the profit will fall. the supply of capital curve shows the rate at which the firm is able to raise capital as profit rate changes. the area OAPG represents the growth profit rate combinations open to the firm. thus the highest attainable profit rate is P and the highest growth rate is G.

Two basic points are apparent from the above discussions.

(i) Since owners are mainly interested in dividends, owner controlled firms will choose point P .This is because , if the

retention ratio is fixed, maximum profits will yield maximum dividends. But if owners are interested in capital gains, which arises from growth, they will choose a point between P and G.

(ii) If managers are assumed to have the objective of growth maximisation subject to a security constraint, management controlled firms will choose point G The security constraint is the minimum valuation ratio which implies a maximum level of retention ratio.[1]

(3) The Managerial Discretion Model of Willamson

According to the Willamson [1973] managers have discretion in pursuing policies which maximise their own utility rather than giving benefits to owners by maximising profits. The utility function of the managers can be written in the form :-

$$U = f(S, M, I_D)$$

where S = Staff expenditure , including managerial salaries (administrative and selling expenditure)

M = Managerial emoluments (luxurious offices , company cars and other perqusites, often known as 'slack')

I_D = Discretionary investment

[Discretionary investment expenditure gives satisfaction to the managers because it allows them to materialise their pet projects. this caters to the self actualisation needs of the managers.

Techically $I_D = \Pi - \Pi_0 - T$, where Π = actual profits , Π_0 = minimum profits requirements and T = tax.]

Willamson in his model showed that for a owner controlled firm where the objective is profit maximisation , there will be no slack payments or discretionary expense. But for a management

controlled firm managerial slack and discretionary investment will be quite large ($M > 0$, $I_D > 0$) and profit will be lower.

The various managerial theories discussed so far show difference in objectives pursued by owners and managers of firms . Based on these discussions, several hypothesis regarding the financial behaviour of firms, depending on their control criteria can be formulated. These are:-

H1 : Rate of returns on investment or profitability of owner controlled firms will be greater than that of management controlled firms

This is because the main objective of owner-controlled firm is to maximise profit. This is evident from the traditional as well as different managerial theories.

H2 : Growth rate (measured by size) of owner controlled firms will be smaller than that of management controlled firms

This is emphasised by Marris and Radice ; according to them managers try to maximise growth rate subject to a profit constraint.

H3: Sales growth rate of owner controlled firms will be smaller than that of management controlled firms

For the reasons described in the analysis of Baumol's sales maximisation model ,managers will try to increase the amount of sales subject to a profit constraint.

H4 : Retention ratio of owner controlled firms will be lower than that of management controlled firms.

This is of course an ancilliary of the hypothesis 2 . Firms aiming for faster growth must have a greater reliance on internal sources of funds.

H5 : Return to the equity shareholders , or return on net worth will be higher for owner controlled firms rather than for management controlled firms.

Since owners concentrate on profit maximisation, it is natural that they will try to maximise return also on their own funds. This of course has th effect of maximising the earning per share.

H6 : Leverage or Debt-Equity ratio of owner controlled firms will be higher than that of management controlled firms.

This hypothesis derives its logic from the argument of Marris, that job security about which managers are really anxious is inveresely related to leverage. Hence, Managers are likely to discourage use of excessive debt in the capital structure, thereby, minimising the chance of firms going into liquidation for non- payment of interests and loans on time. Owners on the other hand, prefer higher debt so that their equity base is not diluted and also because use of cheaper debt in the capital structur permits them to increase earnings per share.

H:7. Owner controlled firms have a lower liquidity factor than that of management controlled firms.

Though it is prudent for managers to choose an optimal liquidity ratio which balances both solvency and bankruptcy, yet Marris assumes that there is a positive relation between liquidity and security . Security of managers depend on liquidity as one of the factors, and thus managers emphasise on this factor.

H:8. The ratio of market value to book value will be higher for owner controlled firms than that of management controlled firms.

This hypothesis warrants support from H5 and H4. As owner controlled firms usually pay higher dividend and earn higher return on equity, it is expected that the market price of the shares of the owner controlled firms will be higher than that of the management controlled firms. Thus the above stated ratio would normally be higher for owner controlled firms.

No claim is being made here that the above mentioned hypotheses are exhaustive. Innumerable hypotheses can be developed from the vast literature of Industrial Economics. Further, there is the scope of debate on of the above assumptions. However, we refrain ourselves from entering into such debate, as it will unnecessarily complicate the very purpose of the present study. It is worhwhile to mention here, that, most of the empirical studies neither accepted nor rejected these hypotheses. [See Monsen, Chiu & Cooley- 1968, Radice- 1971, Holl -1971, Kania & McKean-1976, McEachern-1987, Sorenson-1974, Thonet & Poensgen-1979].

2.3 *Scope of the study*

The complex relationship between management and owner of modern business is imbeded in of the development of large scale corporations. The nature of this relationship and it's economic implications drew considerable attention of western scholars. Thus, a host of research works mainly emphasizing efficiency consequences of separation of ownership from management in the modern corporation appeared in a number of reputed journals.

The study under consideration is also an attempt to show the economic implications of the present state of relationship between *owner* and *management* of the Indian corporations. Emergence of Government controlled financial institutions as the real owner of private corporate sector makes the Indian situation diffrent form the capitalist country. These institutions whose basic behaviour is guided by the doctrine of Mixed Economy pursued by the Government play an unique role in the private corporate sector. These institutions neither behave like an *owner*, who exerts direct or indirect control on managementnor induldge in active *management* of the corporations. So, these firms do not fit neatly into the definition of either *owner controlled* or *management controlled* firm, in the true sense of the terms. To suit the Indian economic situation, both the emphasis and approach of the present study differs from the studies of the western countries.

Initially, we have simply tried to show- whether economic behaviour of the firm changes with rise in institutional equity holding ? Is it posible to discriminate between firms having high and low institutional holding? These queries will be helpful for an understanding of efficiency consequences of the emergence of

institution as the real owner of corporate sector.

To perceive present state of relationship betueen owner and management in Indian corporations, further, the study attempts to show - whether corporate objective changes with rise in institutional equity holding ? Alternativly,- what objective or set of objectives firms with high institutional equity holding seek to achieve ? Early discussions show that the group *owner* or *manager* that remains in the helm of corporate control tries to influence the objective of the firm to satisfy their own interest. Thus the above queries will be helpful for an understanding - who are in actual control of the firm despite its ownership characteristics ? What is the present state of relationship between institution and management of the firm ? Does this relationship offers any scope of management exploitation of owners ?

Above two issues are interrelated. First tries to show, emergence of institution as the owner of corporate sector and its efficiency consequences. Second mainly emphasizes on the present state of relationship between owner and management of the firm. If these two issues are considered jointly, it will be helpful for an understanding - wheter there is any need for change in the attitude of financial institution towards corporate sector ?

2.4 *Description of Variables*

It becomes imperative to introduce the financial variables used in the study after the formulation of various hypotheses in the previous disussion. These variables will help to test the different hypotheses and analyse the financial performance of the firms under consideration. Financial analysis is

the technique of identifying the financial potencies and infirmities of the firm by establishing relationships between the items of the final statement of accounts and also other relevant economic information. The variables used are in the form of financial ratios.

Ratio analysis is a very powerful tool to measure the financial position and performance of a firm. Several ratios can be calculated from the accounting data contained in financial statements. These ratios can be grouped into various categories according to the financial activity or function to be evaluated. Some of these are (1) Profitability ratios (2) Leverage ratios (3) Liquidity ratios and (4) Shareholders earning ratios.

For the purpose of the study, only nine ratios have been selected among many ratios available. These variables, though not exhaustive, are however potential enough to give value based judgements about profitability, liquidity, leverage and shareholders benefit.

The table below shows the list of variables used :-

Table 2.4

Variables employed in the study

Variable	Formulae
Pre-tax Profitability (X1)	$\frac{\text{Net Profit before taxes}}{\text{Total Assets}} \times 100$
Post-tax Profitability (X2)	$\frac{\text{Net Profit after taxes}}{\text{Total Assets}} \times 100$
Growth rate of Assets (X3)	$\left\{\frac{\text{Assets at end of period N}}{\text{Assets at end of period 1}} - 1\right\}^{1/N} \times 100$
Growth rate of Sales (X4)	$\left\{\frac{\text{Sales at end of period N}}{\text{Sales at end of period 1}} - 1\right\}^{1/N} \times 100$
Retention ratio(X5)	$\frac{\text{Profit retained}}{\text{Post tax profits}} \times 100$
Return on net worth (X6)	$\frac{\text{Profit retained + Eq.dividend}}{\text{Net Worth}} \times 100$
Debt -Equity ratio (X7)	$\frac{\text{Debentures + Bonds}}{\text{Net Worth}} \times 100$
Liquidity ratio (X8)	$\frac{\text{Current assets}}{\text{Current liabilities}} \times 100$
Valuation ratio (X9)	$\frac{\text{Market value of Eq. share}}{\text{Book value of Eq. share}} \times 100$

All variables except X_9 are based on pure accounting data and suffers from certain drawbacks inherent in the present accounting system. Variable X_9 however is based on both accounting data and stock market valuation of the firm. It is worth mentioning here that most of these variables were also used in the study conducted by different authors earlier though in different context by Singh and Whittington [1968].

Accounting data in spite of its defects, convey in most cases, the best available information about the current and past performance and position of the firm to the investors and other interested members of the financial community. Thus there remains no alternative but to trust these variables as true indicators of the performance of firm although many accounting definitions of the same variable are possible. However given the nature of available data, the definitions finally selected, and the one used here, are most appropriate from the economic and from the practical point of view.

The first two variables (X_1 and X_2) are useful for measurement of return on investment, or in other words are used as indicators of how efficiently the assets of the company are deployed. Pre-tax profits include trading profits, and other incomes of the firm. They are net of depreciation and charges for outside liabilities. Post-tax profits are computed by deducting from the pre-tax profits, the amount of corporate taxes specific to the company. The necessity of bringing into effect the corporate taxes is that, in the Indian context tax rates differ for companies in which the public are substantially interested and closely held companies (Section 2(18) of the Indian Income Tax Act 1961). Equity

shareholding to the extent of 50% (40% in case of industrial companies sec. 2(8) of the Finance Act 1985) by financial institutions vis-a-vis Statutory Corporation, individually or cumulatively, can alter the nature of the company and consequently the tax rates and post-tax profits. Again total investment or total asset for the purpose of computation of this ratio is equal to the sum of fixed assets and current assets; assets being valued, as is the usual practice in balance sheets, at historic costs net depreciation.

These efficiency indicators of the firm are however not always free from criticism. This is because firms which have the same profitability could in principle, show different accounting rates of return if their rates of growth of acquisition of fixed assets are not the same. The one with higher growth rate will show lower accounting profitability. The reason for this is depreciation is not accurately measured by rules of thumb usually employed by accountants for this purpose. The rationale of this discussion is to assert that profitability as a measure of efficiency should be used with other performance indicators.

The variables X_3 and X_4 are useful indicators of the degree of expansion or growth of a firm both in terms of total assets as well as market share held by it. The term assets here denote total assets employed (fixed plus current assets) net of depreciation and sales denote the total revenue generated during the accounting year. Growth of firm can also be measured in terms of number of employees value added etc. Since adequate information regarding these attributes are not readily available, therefore most of the studies depend upon total assets and sales to calculate

the growth rate of the firm.[2] Growth rate of both assets and sales have been calculated on compunding basis. Though statistical techniques like time series analysis could have been used, yet it has been avoided because of non-uniformity of time periods or accounting years which were different for different firms.

The percentage of available disposable income (earnings after tax) retained within the firm is expressed by the ratio X_5. This also expresses the firm's choice with respect to dividend pay-out. There is a close relation between the retaining capacity of a firm and its growth rate, because a significant portion of project financing is made through internal resources. This means that firms having a higher retention ratio may have a higher growth rate in terms of assets.

The sixth ratio (X_6) measures the percentage rate of return to the equity holders. This ratio may be alternatively deployed to measure the efficiency of the firm; this concept was used in many of the earlier studies. This ratio has an extra advantage over the ratios X_1 and X_2 since it suggests how efficiently the capital structure of the company has been designed. This ratio thus can be used simultaneously with the gearing ratio (X_7) to measure efficiency and riskiness of the firm. Many research works while accepting return on equity as a measure of efficiency considered it in conjunction with other variables to measure riskness of the firm.[3]

X_7 (Debt-Equity ratio) represents the choice of the firm with respect to the long term debt. It expresses long term outside liabilities as a percentage of total equity capital and accumulated reserves. With reference to the above discussion on X_6,

it can be said that though using more debt capital helps to enhance earnings available to the shareholders, the possibility of variance in earnings and the increased burden of debt interest servicing enhances the risk element of the firm. The variable has special significance for this study because financial institutions supply funds to the corporations both in the form of equity and other form of loans.

The variable X8 or the current ratio expresses the liquidity position of the firm. This is the ratio of current assets(stock in hand, debtors, bills receivable, marketable securities and cash) to current liabilities (current tax liabilities, creditors, bills payable, bank overdrafts, etc.). This ratio also can in a way, represent the working capital of the firm (which is equal to current assets minus current liabilities).

Valuation ratio X9 of course cannot be considered to be a peer with the other ratios so far discussed. The valuation ratios concept used in this study shows the relationship between market value to the book value of the equity shares. Since financial accounts are prepared on the basis of historical costs, book values of the shares have been computed accordingly. The market value of the shares are based on the average of highest and lowest market prices of the relevant accounting year. Valuation ratio represent the market's evaluation of a firm's future earning prospects, per unit of their assets. The past performance of the firm is reflected by the valuation ratio only to the extent that the market judges its future prospects by its past records.

It is also worth mentioning here that the market for corporate control is concerned with this ratio. As the

valuation ratio falls, it may be advantageous for an outside party to purchase those shares to get control over the firm. If the firm is functioning in a fully efficient market, management is compelled to maximise returns to owners and thereby increase value of the share because the only other alternative is to forfeit control.[4]

The ratios discussed above will be use individually as well as in conjunction with others to make a comparitive analysis of the performance of the firms having high and low institutional equity holding. These ratios are widely need as a measure of efficiency and have a close relationship with the discussions on managerial theories made earlier.

2.5 *Statistical Properties of Ratios*

Since this research work is based on statistical testing of various financial ratios, it would be rational to examine the statistical properties of these ratios.

At the outset it is to be made clear that the statistical analysis followed in the present study is based on the assumption of the normality of the distribution of variables. This might be a source of some controversy as there are evidences for and against this assumption. A brief discussion on some of the earlier studies would be in order for a better understanding of the problem.

Horrigan [1965] examined the statistical nature of financial ratios and found that ratios tended to be approximately normally distributed. However, he found in some cases ratios were often positively skewed, having an effetive lower limit of zero but

an indefinite upper limit. The author concluded that financial ratios can be subjected to the usual parametric statistical techniques although logarithimic transformations might be appropriate where positive skewness is extreme. Regarding the information content of ratios the author commented "The presence of collinearity is both a blessing and curse for financial ratio analysis. It means that only a small number of financial ratios are needed to capture most of the information ratios can provide, but it also means that this small number must be selected very carefully ".

Bird and McHugh [1977] found that within industries, firms tend to maintain a stable relative ratio position over at least a five year period. Ratios within an industry are approximated by a normal distribution in most cases although the quick asset and asset structure ratios are often substantially non-normal.

Deakin [1976] investigated the normality of the distribution of 11 commonly used financial ratios and found that ten of the eleven were distributed significantly different from normal. Transformation of the ratios to either their square roots or natural logarithms was useful in certain cases for approximating normality but Deakin did not provide any guidelines for determining those cases where transormation would be helpful.

The findings of these studies on statistical properties of financial ratios are to some extent contradictory. However, there is enough evidence to say that the probability of normal distribution of variables cannot be completely ruled out. For the purpose of this study, the statistical techniques applied are based

on this assumption.

To arrive at more reliable inferences, various non-parametric tests which relax these assumptions have also been used.

2.6 *Review of Literature*

The seminal work of Berle and Means [1932] provoked a host of researchers to conduct study on efficiency consequences of dispersion of shareholding and thereby separation of ownership from control. These are the problems essentially associated with the development of the modern corporations. Depending on particular economic settings, nature of the problem varies from country to country and in India, at present, it is marked by the dominance of government controlled financial institutions in the power structure of corporations. Considering this unique situation of India, the objective of the present study differs from that of the studies conducted in industrially developed countries. However, as the present study draws heavily from the studies based on the experience of the developed countries, a brief desoription of these studies will be in order.

Most of these studies were based on the hypothesis that owners and managers were motivated according to different goals and performance of firms varied accordingly.

Kamerschen [1978], Sorenson [1974], Thonet and Poensgen [1979] found that owner and manager controlled firms did not in fact demonstrate any significant differences in financial behaviour. These authors found that comparison of control types was of limited applicability when considering growth maximising or

profit maximising hypothesis. McEachernm, again pointed out that firms in which the dominant stockholder is also the manager appear to grow faster than firms in which the dominant stockholder is not part of the management. Sorenson reported higher rates of returns and also higher growth rate of sales for owner controlled firms. Interestingly, he found that management controlled firms had higher pay out ratios than owner controlled firms. However, the author stated that these differences were neither substantial nor statistically significant.

Contrasting inferences to the above stated studies were drawn by researchers like Monsen, Chiu and Cooley [1968], Radice [1971] and Holl [1977]. These authors found that owner and manger controlled firms differed in their financial behaviour. Holl, in his study emphasised the role of "corporate control market" as a mechanism to discipline the management. However, his study revealed that the profit rates of management controlled firms were significantly lower than owner controlled firms.Higher profit as well as higher growth rates for owner controlled firms in comparison with mangement controlled firms were reported by Radice. In fact, this study suffers from some methodological problems. Influences of concentration ratio, barriers to entry etc., on profitability and growth of firms were ignored while estimating the impact of control criteria on the efficiency of the firm. It somewhat minimises reliability of thye findings of the study.

There are a large number of studies apart from those mentioned here. Some of them are thought provoking and deserve serious attention of researchers. But we refrained ourselves from reviewing those studies and preferred to concentrate on some

leading works only.

It is apparent from the above brief discussions that the findings of the studies attempting to measure efficiency consequences of separation of ownership from control remain inconclusive and contradictory. All these studies differ in respect of definitions [5] used to identify management and owner controlled firms, variables chosen, time period of study etc., and therefore these might have resulted in contradictory findings. However, the fact remains that these inconclusive and contradictory studies cast some doubt upon the usefulness of classification of firms on the basis of control criteria.

It would be worth mentioning heve that regarding the choice of performance variables, most of the above studies used ratios to measure profitability and growth. In addition to these, variables like debt-equity ratio, liquidity ratio, EPS, pay-out ratio, valuation ratio, growth rate of dividends, assets, sales, return on networth etc were also used extensively. Variables selected for the present study thus have close resemblance with earlier studies of similar nature. The time periods for which the variables were selected varied from 5 years to more than 20 years.

In, the Indian context, with the exception of a very few researchers, the impact of financial institutional equity holding on corporate control and management has escaped general attention. Among these few researchers, the study by Dr. L.C.Gupta [1984] delved deep into the aspect of corporate control by financial institutions. In his study he noticed that business families with very nominal equity holding were controlling the corporations with more or less disregard for the major shareholders - the financial

institutions. However, the author did not present any empirical evidence to suggest relationship between financial institutional holding and corporate efficiency. The empirical study conducted by Dr. M.K. Roy [1991] demonstrated a negative correlation between institutional holding and corporate performance. For the purpose of the study the author classified the firms into *management controlled firms* and *others* on the basis of amount of institutional equity holding. However only four variables viz, pre and post-tax profitability, growth rate of assets and valuation ratio were considered in the analysis. This limited the scope of the study since many distinguishing characterstics may have remained secluded.

The present study attempts to fill a serious research gap in this sphere of study. By using many variables and rigorous statistical exercises effects of institutional equity holding on corporate performance and behaviour will be examined. This will further lead to formulation of policy guidelines and suggestions for financial institutions regarding corporate control and management.

2.7 *Classification of Firms on the Basis of Institutional Shareholding.*

A prior classification of sample firms is necessary to facilitate a comparitive analysis of the efficiency of the firms having high and low institutional holding. The terms "high" and "low" have been used to refer to the ownership characteristics of the firm; while the former denotes institution owned firms, the latter points at the firms where ownership lies elsewhere.

The problem with this approach rests with the selection of the criteria as to how much shareholding by the institutions would permit them to behave like an owner. Generally if an individual or group owns 50% or more of the total stock they posses necessary voting power to determine the composition of the board of directors and thus enjoy complete control over the company. As the stock becomes widely disperesed among increased number of shareholders, it is believed, that, an amount less than 50% would be sufficient for maintaining control. In their pioneering work Berle and Means accepted a share concentration of 20% or more , known to be held by an individual or group acting in concern, as sufficient for maintaining effective control. More recently, various empirical studies based on the experiences of different countries used various cut-off rates to define control situations.[5] However, in India, due to the presence of certain legal definitions, identification of the owner of the firm becomes easier.

According to the provisions of the Securities Exchange (Regulation) Act, if any person or group holds 25% or more of the equity shares of a company , then the person or group is treated as the owner of the company. Appplying this definition, Government controlled financial institutions are the real owners of the firms where their holding is equal to or more than 25%. Thus, the following classification will be maintained throughout the study.

Financial Institution Owned (FIO)	Firms Owned by others
Equity holding by Financial Institutions = 25% or more of subscribed capital	Equity holding by Financial Institutions = Less than 25% of subscribed capital of firm.

The problem that arises while adopting the above criteria is, the firms that have been identified as the institution owned firm at the beginning cannot always be expected to remain so throughout the period of the study. This means that there can be possibilities of firms switching from one category to another.

But, the probability of institution owned firms switching to the other category is very low. The underlying assumption is that financial institutions rarely sell their stocks, and even if they do so, chances are very minimum that they will sell in bulk. Again on the other side, considering the bouyant situation in the Indian capital market during the eightees, it is expected that financial managers of corporations would raise their funds directly from the public rather than from the institutions. So again the chances of 'Other'(below 25%) corporations switching to 'F.I.O.'(above 25%) category is also low. Thus, it would be quite reasonable to assume that financial institutional equity holding remained more or less constant during the period of the study.

2.8 *Description of the Sample*

For the purpose of the study, the sample firms were chosen on the basis of availability of data on financial

institutional holding. List of firms where institutional equity holding was less than 25% was available from 'The Economic Times of India' (dated 2.11.1983) and for those where equity holding was more than 25% was available from the working paper no. 17 and 18 of Prof. S. K. Goel of Indian Institute of Public Administration. Many companies mentioned in these papers were not listed on any stock exchange, or for some other reason (for non-availibility of financial statements) not exhibited in the Bombay official stock exchange directory. After eliminating these firms from the list, a final sample of 100 firms were obtained. A frequency distribution of the institutional shareholding of these firms are shown below :-

Table 2.8(a)

Frequency Distribution of Institutional Equity Holding of Sample Firms

E.Share-holding(%)	Number of Companies	E.Share-holding(%)	Number of Companies
0-5	8	40-45	8
5-10	0	45-50	9
10-15	7	50-55	5
15-20	11	50-55	5
20-25	7	60-65	1
25-30	17	65-70	1
30-35	14		
35-40	10	Total	100

Though there is a pre-ponderance of firms (67%) where institutional holding is above 25%, but this could not be avoided due to the reasons mentioned above. However, firms are exactly equally distributed above 30% and below 30% and hence reliability can be placed on the distribution.

The sample firms were selected from a cross section of industries. For a multiproduct firm, there arises the problem of assigning the firm to a particular industry. However, the problem was resolved by considering the main product of the firm that contributes maximum to its total revenue. Assignment of the firm to a particular industry was made accordingly. Again industry classifications were made following the widely accepted Reserve Bank of India approach.

Table 2.8(b)

Classification of Firms According to Industries

Macro classification	No. in each group: Above 25%	Below 25%	Total	Micro-Classification	No. in each group: Above 25%	Below 25%	total
1. Textiles	17	14	31	1.1 Cotton Textiles (spinning & weaving mills)	10	7	17
				1.2 Synthetic fibres, Silk textiles and woolen textiles	5	4	9
				1.3 Jute textiles	2	3	5
					17	14	31
2. Engineering	17	8	25	2.1 General Engineering	8	5	13
				2.2 Electrical Equipments & Cables	7	2	9
				2.3 Metal Alloys, metal products & Structures	2	1	3
					17	8	25
3. Chemicals	9	6	15	3.1 Chemicals, dyes, pharmaceutical, Refineries, plastics & fertilizers	9	6	15
4. Other industries	24	5	29	4.1 Hotel business	0	1	1
				4.2 Paper, Paper boards & hardboards	8	1	9
				4.3 Tea	0	1	1
				4.4 Food processing	0	1	1
				4.5 Cement	4	0	4
				4.6 Electric power	6	0	6
				4.7 Miscellaneous (Tyre & Rubber, Tobacco products etc.	6	1	7
					24	5	29
Total	67	33	100		67	33	100

It is evident from the above table that an industrywise analysis is possible only for the first three broad categories, i.e. textiles, chemicals and engineering, because of the sufficient number of sample firms above and below the cut-off point of 25%. The last group consists of a variety of industries and also the number of firms below the cut-off point is very small as compared to number of firms above the cut-off point. So this group is always ignored while attempting any industry-wise anlysis.

Apart from industry characteristics, size is an important factor which determines in many cases the performance of the firm. All the sample firms were the member of 250 top companies of India ranked according to assets at least once during the period of study. The assetwise distribution (as a measure of size) is shown below :-

Table 2.8(c)

Distribution of Firms on the Basis of Total Assets in the opening year (1980)

Total Assets in crores(Rs)	Total no. of firms	Firms above 25% holding	Firms below 25% holding
10-30	36	23	13
30-60	27	20	7
60-90	18	8	10
90-120	7	5	2
120-150	6	5	1
150-180	2	2	0
Above 180	4	4	0
Total	100	67	33

2.9 *Time Period Studied*

The present empirical study conducted in this work is based performances of the sample firms over the period 1981-85. This five year time period is sufficiently long and reliable to assess financial performances of the firm. Bird and McHugh [1977] found that within industries, firms tend to maintain a stable relative ratio position over at least for a period of five years. This time period is also important because of the fact that the debate on the 'role of institutions in the private corporate sector' once again came to surface due to some controversial take over attempts by N.R.I.'s.

Again to avoid the problem of statistical pooling the times period selected was divided into a sub-period of 3 years (1981-83). It is based on the logic that simultaneous analysis of results obtainted from the 5 year period and 3 year period would together be more reliable.

2.10 *Conclusions*

1. It is clear from the above discussions that nine variables have been selected, on the basis of different mangerial theories of the firm. These variables will help to evaluate the financial performance of the firms in context of the volume of shareholding by financial institutions.
2. Discussion on the various studies show that most of them have been inconclusive about any behavioural difference between owner controlled and mangement controlled firms.
3. Firms where institutional ownership is more than 25% have been designated as 'financial institution owned and the rest as 'Others'.

This cut-off rate is recognised by the Securities Exchange (Regulation) Act.

4. The Sample fims belong to a variety of industries, and also they are considerably large in size. These firms have been broadly classified into three industries (1) Textile, (2) Chemicals and (3) Engineering.

5. A long time period of 5 years has ben chosen, which has again been subdivided into a period of 3 years to increase reliability of findings.

****

NOTES (CHAPTER TWO)

1. This idea stems from the fact that if only internal finance is considered as the source of finance, then the rate of profit and the rate of capacity expansion will be linear. External finance complicates matters but does not alter relationships.

2. This definition was used by Singh and Whittington and also by D.R.Kamerschen.

3. For references on this issue see (i) David Durand 'Cost of Debt and Equity Funds for Business : Trends and Problems of measurement' reprinted in The Management of Corporate capital' (ii) Modigliani and Miller, 'The Cost of Capital, Corporation Finance and Theory of Investment'. American Economic Review, 48 (June 1953), pp. 261-97, (iii) Brighan & Hindsale, Illinois, Dryden Press, 1975, p.256.

4. The theory that threat of takeover is expressed as a valuation ratio constant has been commented on by Singh as:- " Unless a firm achieves a certain minimum valuation ratio, it is almost bound to be acquired , but once it has achieved this value it is more or less safe from acqusition." [Singh, 1971, p 81].

5. Different classifications of management and owner controlled firms as adopted by different researchers are presented below:

(i) Management controlled if no block of ownership greater than 5% existed. Owner controlled if a party owning 10% of voting stock was represented on the board and also if a party owning 20% of voting stock was not represented on board [Monsen, Chiu & Cooley]

(ii) Owner controlled if any definable interest group heed more than 15% of voting shares and management controlled where groups held less than 5% [Radice]

(iii) (a) Strong owner controlled where a party held more than 30% of common stock (b) Weak owner controlled where a party held more than 10% but less than 30% (c) Management controlled where a party held less than 10% [Holl]

(iv) Owner controlled if a group consisting of one or three individual, one to three families, or the board of directors as a group controlled 10%, 15%, or 20% of common shares. The rest were manager controlled [Kania & Mckean]

(v) (a) Externally controlled firms were defined as firms with a dominant interest owning 4% of voting stock but is not the manager. (b) Owner managed where dominant interest owning 4% stock is the manager (c)Manager controlled where no single dominant interest owned 4% stock [McEachern]

(vi) Owner controlled if a concentration of 20% existed. Management controlled if no share concentration of 5% was evident [Sorenson]

(vii) Owner controlled if a person or family owned more than 25% shares. Management controlled if government or other institution held more than 25% shares. [Thonet & Poensgen]

REFERENCES (CHAPTER TWO)

(i) *Baumol, W.I.*, 'Business Behaviour, Value & growth;(Macmillan, New York (1957), Revised edn. Harcourt Brace & World Inc. 1967.

(ii) *Berle. A.A. & Means, G.C.* 'The Modern Corporation & Private Property McGraw-Hill, New York 1932.

(iii) *Bird. R.C. and Mchugh. A.J.* 'Financial ratios- An Empirical study',Journal of Business Finance & Accounting, Spring 1977.

(iv) *Deakin. E.B.* 'Distribution of Financial Accounting Ratios-some empirical evidence'. The Accounting Review, January 1968.

(v) *Gupta L.C.* 'Institutional equity holding and corporate control' The Economic Times of India, April 16, 1984.

(vi) *Holl. Peter.* 'Control type and the market for corporate control in large U.S.Corporations'. The Journal of Industrial Economics June 1977.

(vii) *Horrigan-J.O.* 'Some empirical basis of financial ratio analysis'; The Accounting Review, July 1965.

(viii) *Kamerschen. D.R.* 'The Influence of Ownership and Control of Profit Rates';American Economic Review, vol vii,June 1968.

(ix) *Kania. J.J. & Mckean. J.R.* 'Ownership, control and the contemporary corporation- a general behaviour analysis'.KYKLOS-vol 29 1976.

(x) *Marris. R.A.* 'A model of managerial enterprise',Quarterly

Journal of Economics.--alias.--R. Marris-Theory of Managerial Capitalism,Malmillan 1964.

(xi) McEachern,William A.'Corporate control and growth-An alternative approach.' The Journal of Industrial Economics vol xxvi, march 1987.

(xii) Monsen. R.J., Chiu.J.S. and Cooley.B.E.'The effect of separation of ownership and control on the performance of the large firm.',Quarterly Journal of Economics, August 1968.

(xiii) Radice,H. 'Control Type, Profitability and growth in Large Firms-an empirical study.' Economic Journal, LXXXI, Sept. 1971.

(xiv) Roy, M.K. ' "Business Takeover and Role Of Financial Institutions in India ", Academic Foundation, New Delhi, 1991

(xv) Singh. A. and Whittington.G. 'Growth, Profitability and Valuation' Canbridge, 1968.

(xvi) Singh. A., " Take-Overs- Their relevance to the Stock Market and Theory of the Firm", Cambridge, 1971.

(xvii) Soreson. R. 'The Separation of Ownership and Control and Firm Performance : An empirical analysis', Southern Economic Journal, vol 41, July 1974.

(xviii) Thonet,P.J. and Poensgen, D.H. 'Managerial Control and Economic Performance in Western Germany'. The Journal of Industrial Economics vol xxviii, Sept. 1979.

(xix) Williamson, O. 'Managerial Discretion and Business Behaviour', Modern Business Enterprise

---

CHAPTER THREE

INSTITUTIONAL EQUITY HOLDING AND CORPORATE EFFICIENCY

AN UNIVARIATE ANALYSIS

3.1 *Introduction*

A comprehensive discussion of prevailing managerial theories of the firm, different variables used and a detailed break up of the sample was made in the previous chapter. We shall now proceed directly to the main theme of the present study - institutional equity holding and its impact on the efficiency of the firm. The analysis will be done throughout on an inter-firm cross-section basis: the findings of the univariate investigation will be given in the present chapter and that of multivariate analysis in the following chapter.

This chapter will mainly try to show, whether it is possible to distinguish between the financial behaviour of firms having high institutional holding with those having low institutional holding .

Both parametric and non-parametric statistical tests have been applied to test the various hypotheses discussed before. The order of discussion of the present chapter is as follows :

(1) Sections 3.2 to 3.6 principally deals with the application of parametric test statistics to test the hypotheses

(2) To corroborate the results of the parametric tests, various non-parametric tests have been carried out in Section 3.7

(3) Section 3.8 summarises the findings of all the analyses carried out in the previous sections.

3.2 *A First Insight into Relative Characteristics of Institution Owned and Other Firms*

Since the financial records of the two groups of firms are compared in terms of many variables (9), it would be proper to have a general and unsophisticated view of the nature of differences which exist between the two groups of firms.

Table 3.2 shows in very naive, common sense terms, without using any statistical tests, how some of the important characteristics of F.I.O. firms differ from O.O. firms. In this demonstration, which is purely for illustrative purposes, the records of the F.I.O. firms for the averages of 5 year and 3 year accounting periods are compared with the corresponding records of the O.O. firms.

Table 3.2

Relative characteristics of F.I.O and O.O firms :- a bird's eye view (pooled data)

Variables	Period-5 years	Period-3 years
Pre-tax profitability (x_1)	78.2	72.2
Post-tax profitability (x_2)	83.3	78.5
Growth rate of assets (x_3)	85.2	74.0
Growth rate of sales (x_4)	110.3	150.7
Retention ratio (x_5)	93.4	95.4
Return on net worth (x_6)	118.8	112.4
Debt. Equity Ratio (x_7)	174.4	220.7
Liquidity Ratio (x_8)	94.0	92.3
Valuation Ratio (x_9)	63.5	71.9

Note :-For each variable the average figure of F.I.O firms is expressed as a percentage of that for the corresponding O O firm.

The above results are important in the respect that in most of the cases the variables of the institution owned firms have values lower than that of the others. Special notice may here be given to pre and post tax profitabilities, growth rate of assets and valuation ratio. The direction of retention ratio and liquidity ratio is same as the other variables mentioned above, but there is a noticeable difference in magnitude. On the other hand, variables like growth rate of sales, return on net worth and debt equity ratio move in an opposite directions, i.e. here the F.I.O.firms have higher figures. Considerable differences in debt-equity ratio (more than double for the three year period), explain to some extent the higher return on net worth due to leverage effect.

Now, because of variations in the direction and magnitude of the variables, it would not be rational to make any specific comments on the extent of difference between the average characteristics of the two groups of firms. A comparison between the two groups based on average characteristics may not only be rustic but also may in fact be misleading.

It must be emphasised that these first impressions do no more than convey some general flavour of the kind of differences that exist between the groups. For reliable conclusions about the nature of these differences between two groups of firms it is necessary to study the comparative group characteristics in much greater detail. A proper analysis, thus requires use of tests of significance or other more rigorous statistical exercises.

3.3 *A Comparative Study of the Characteristics of two Groups of firms - Pooled data, Univariate analysis*

In this section various statistical tests have been used to compare the charactersistics of the two groups of firms. In the first stage parametric tests have been used and are consequently followed in the later sections by various non-parametric tests.

(a) Test of difference of means

Under this test it is hypothesised that there is no difference in the mean value of the characteristics of the two groups of firms. We shall assume that in each situation the probability distributions of the variables are of normal type.

Table 3.3(a)

Comparison of characteristics of F.I.O.firms and O.O firms. (Period - 5 years)

Variable	O.O firms(N_1=33)		F.I.O.firms(N_2=67)		Difference
	Mean	S.D.	Mean	S.D.	of means
X_1	5.93	5.57	4.64	4.99	(+)1.29
X_2	4.18	3.74	3.48	4.10	(+)0.70
X_3	23.01	10.41	19.59	12.61	(+)3.42
X_4	14.45	7.99	15.94	11.30	(-)1.49
X_5	67.88	17.39	63.38	32.80	(+)4.50
X_6	10.75	7.33	12.77	12.30	(-)2.02
X_7	41.69	28.32	72.69	61.29	(-)31.00(a)
X_8	115.67	30.70	108.73	27.51	(+)6.94
X_9	82.09	59.60	52.09	46.72	(+)30.00(b)

Table 3.3(b)

Comparison of characteristics of F.I.O. firms and O.O. firms

(Period - 3 years)

Variables	O.O firms(N_1=33)		F.O.O. firms(N_2=67)		Difference
	Mean	S.D.	Mean	S.D.	of means
X_1	7.67	6.67	5.54	4.76	(+)2.13(c)
X_2	5.20	4.54	4.08	3.83	(+)1.12
X_3	27.27	20.18	20.18	15.70	(+)7.09(c)
X_4	13.87	11.30	20.90	21.10	(-)7.03(b)
X_5	69.34	18.70	66.13	26.50	(+)3.29
X_6	13.96	10.27	15.69	12.70	(-)1.73
X_7	33.19	49.26	73.23	59.05	(-)40.04(a)
X_8	113.50	35.83	104.79	27.99	(+)8.71
X_9	90.65	56.75	65.17	47.24	(+)25.48(b)

Notes :- (a) Significant at 1% level (b) at 5% level

(c) at 10% level

The analysis provided in table 3.3(a) and 3.3(b) are in consonance with the results shown in table 3.2 . Results obtained in the latter tables are more reliable than that of table 3.2 in the sense that, it helps to identify the variables that can statistically show the differences in characteristic between two groups of firms. Hence, elements of reliability and validity are more in these tables.

The results in the two tables are self explanatory. As the table contains a large amount of innate information, they require some discussions. As stated before, in most cases, the variables of institution owned firms have lower values in comparison with others. Valuation ratio and debt-equity ratio show very high

statistically significant differences. In addition to this, for three year analysis, growth rate of assets, growth rate of sales and pre-tax profitability also show significant differences. Differences in results for the two periods may be due to the reason that variations in performance are smoothened out to a certain extent for longer periods of time. However in both the cases, the statistically significant difference of X_1 and X_9 are confirmed.

Again it would be appropriate to point out here that profitability, growth, valuation ratio, debt equity ratio are interrelated with one another. Though their relationship may not always be linear, it is apparent from the analysis that firms with low financial institutional equity holdings have higher profitabilities and hence higher valuation ratios. However, the nature of relationships between these variables is an extensively debated issue and requires further investigation. According to one school of thought, corporations by using more debt in their capital structure can ensure high returns to their equity shareholders. We believe, this logic cannot explain fully the reason for increased use of debt in the capital structure of institutional owned firm. Perhaps, the most appealing reason is, firms with already high institutional equity holding prefer to raise additional funds by the issue of debentures instead of equity with the hope that it would reduce the scope of intitutional underwriting and thereby further concentration of shares in the hands of the institutions. Though, some part of this debt capital is later subject to conversion into equity, yet issue of debt becomes more instrumental in reducing share concentration rather than equity issues. Now, the high dose of debt pumps up the earnings available to the

shareholders and this is reflected in the higher return on net worth of institution owned firms. But issue of debt puts a strain on the debt servicing capacity and increases the riskiness of the firm. This risk enhancement has an adverse effect on the value of the shares in the market. Thus, though return on net worth of high risk institution owned firms are higher than the 'others', the adverse effect on the market value of shares of these highly geared firms are reflected in their low valuation ratios.

From the above analysis it appears that efficiency of firms are to some extent lost if the institutional holding is high. But arriving at conclusive decisions on the basis of such crude techniques may be misleading. The study has ample scope of using sophisticated techniques to arrive at the right conclusion.

Though the analysis carried out in this Section has better reliability than the analysis in Sec. 3.2, yet it suffers from the limitation of incorporation of statistical bias that usually arises due to pooling of data. This problem has been dealt with in the next section.

3.4. *Statistical Analysis :- The problem of 'Pooling'*

Statistical comparisons of financial characteristics of F.I.O. firms and O.O. firms on a cross section basis gives rise to the general problem of 'pooling'. Analysis can be done in either of the two ways (i) segregating the two groups of firms on the basis of different industries and time periods and (ii) pooling firms across all industries and all years. Now, the question arises which method is to be adopted ?

It is obvious that larger samples give more reliable results and pooling is advantageous from this particular view

point. This approach that has been followed so long, however is not free from some serious shortcomings that might minimise reliability of statistical results.

If firms are pooled, then specific industry characteristics such as degree of competition, growth opportunities, barriers to entry etc. which affect firm performance may to a large extent be camouflaged. Since all industries differ in these characteristics to some extent, it would be difficult to isolate the effect of institutional holding if firms are pooled together. For example previous researchers have assumed that firms within same industries have similar investment opportunities. If institution owned firms within a particular industry achieve growth rates lower than the industry average, then only it may be concluded that considering peculiar industry characteristics, those firms failed to achieve targeted growth rate and vice-versa. In addition to this accounting practices used by firms in the same industry would be more similar than firms in other industries.

However, a very detailed classification, though, is more scientific suffers from the limitation that the number of firms belonging to each industrial group would be minimum for any suggestive statistical analysis. Further any analysis based on detailed industry classification requires each firm to be assigned specifically to a particular industry to which it belongs. This approach complicatis matter in a sense that in the context of today's large multiproduct and diversified firms, assignment of individual firms to specific industries according to one to one correspondence, becomes difficult. Hence such approach would be arbitrary to a large extent.

Thus the above economic considerations suggest that it is important to do the analysis on an industry basis, since it is possible that there might be inter-industry differences in the characteristic of the firms. The approach of present study has been to avoid problems discussed above and industry classifications have been done according to RBI guidelines. Again pooling within the same industry over the periods 1981-85 and 1981-83 would be in order from the statistical point of view. In the next section, only three industries :- (i) Cotton textiles (ii) Engineering and (iii) Chemicals have been considered for further investigation. The number of firms, in each of these categories are not very large, but are adequate to yield reliable statistical results. Number of firms belonging to other industry groups are insufficiant for any meaningful statistical analysis,and are hence ignored.

3.5. *Industrywise Analysis :- Test of differences*

The industry-wise analysis is undertaken in this section to avoid to a large extent the problem of pooling. Here performance variables of institution owned firms are compared with those of O.O. firms within the same industry. Adopting this approach the results of three industries such as Textiles, Engineering and Chemicals are reported below.

Table 3.5

Industry-wise comparison of characteristics of F.I.O. firms and O.O. firms.

(a) Textiles - Period 5 years

Variables	O.O.firms(N_{1T5}=14)		F.I.O.firms(N_{2T5}=17)		Difference of means
	Mean	S.D.	Mean	S.D.	
X_1	4.96	5.51	3.16	4.08	(+)1.80
X_2	3.71	4.50	1.92	3.47	(+)1.79
X_3	22.79	10.42	15.11	10.88	(+)7.68(c)
X_4	16.69	4.15	9.30	6.57	(+)7.39(b)
X_5	69.93	17.59	60.45	47.42	(+)9.48
X_6	9.27	7.27	8.49	9.19	(+)0.78
X_7	59.40	30.16	37.65	40.85	(+)21.75
X_8	121.64	35.11	123.41	26.21	(-)1.77
X_9	81.87	37.27	52.74	32.02	(+)29.13(b)

(b) Engineering - Period 5 years

Variables	O.O.firms(N_{1E5}=14)		F.I.O.firms(N_{2E5}=17)		Difference of means
	Mean	S.D.	Mean	S.D.	
X_1	6.98	4.28	4.48	4.84	(+)2.50
X_2	4.43	3.00	3.20	3.78	(+)1.23
X_3	21.36	9.09	17.81	12.74	(+)3.55
X_4	8.10	5.80	14.14	12.19	(-)6.04
X_5	71.53	21.73	65.84	27.20	(+)5.69
X_6	12.41	8.73	13.80	10.22	(-)1.39
X_7	49.67	23.34	76.65	50.89	(-)26.98
X_8	121.39	12.70	117.10	16.56	(+)4.29
X_9	73.44	38.02	82.21	34.94	(-)8.77

(c) Chemicals - Period 5 years

Variables	O.O.firms(N_{1C5}=14)		F.I.O.firms(N_{2C5}=17)		Difference of means
	Mean	S.D.	Mean	S.D.	
X_1	8.64	3.29	6.18	2.86	(+)2.46(b)
X_2	6.07	2.50	6.11	2.60	(-)0.04
X_3	21.90	9.17	31.83	14.00	(-)9.93
X_4	12.15	8.10	21.42	11.80	(-)9.27
X_5	64.47	12.61	70.09	19.14	(-)5.62
X_6	12.76	4.97	16.91	6.97	(-)4.15
X_7	33.76	18.70	77.85	41.83	(-)44.09(b)
X_8	122.16	28.18	116.74	43.03	(+)5.42
X_9	90.25	29.03	51.52	41.45	(+)38.73(c)

(d) Textiles - Period 3 years

Variables	O.O.firms(N_{1T3}=14)		F.I.O.firms(N_{2T3}=17)		Difference of means
	Mean	S.D.	Mean	S.D.	
X_1	6.89	7.23	3.97	4.66	(+)2.92
X_2	4.79	5.22	2.45	3.48	(+)2.34
X_3	35.07	25.09	19.96	19.95	(+)15.11(c)
X_4	18.23	11.17	11.57	11.18	(+)6.66(b)
X_5	73.07	21.17	64.13	23.74	(+)8.94
X_6	11.46	8.70	9.11	10.65	(+)2.35
X_7	31.50	27.49	34.60	23.27	(-)3.10
X_8	128.60	40.65	112.71	18.15	(+)15.89
X_9	92.24	37.16	65.78	22.32	(+)26.46(b)

(e) Engineering - Period 3 years

Variables	O.O.firms(N_{1E3}=14)		F.I.O.firms(N_{2E3}=17)		Difference of means
	Mean	S.D.	Mean	S.D.	
X_1	8.28	5.91	5.97	4.66	(+)2.26
X_2	5.21	4.10	4.47	2.18	(+)0.74
X_3	20.10	13.72	21.11	20.54	(-)1.09
X_4	8.54	10.76	12.12	15.80	(-)3.58
X_5	70.90	16.20	69.03	18.94	(-)1.87
X_6	24.06	13.50	20.60	10.85	(+)3.46
X_7	48.28	25.42	74.65	52.92	(-)26.37
X_8	119.16	11.80	114.57	16.35	(+)4.57
X_9	89.82	40.00	85.53	34.37	(+)4.29

(f) Chemicals - Period 3 years

Variables	O.O.firms(N_{1C3}=14)		F.I.O.firms(N_{2C3}=17)		Difference of means
	Mean	S.D.	Mean	S.D.	
X_1	8.46	3.71	7.44	5.29	(+)1.02
X_2	6.20	4.11	6.80	4.56	(-)0.60
X_3	11.17	11.94	22.69	12.99	(-)11.52(c)
X_4	28.97	17.91	27.49	25.22	(-)1.48
X_5	63.15	13.20	69.52	33.11	(-)6.41
X_6	15.50	5.90	22.23	11.60	(-)6.50
X_7	30.29	16.76	78.81	45.01	(-)48.52(b)
X_8	118.55	29.46	101.89	50.29	(+)6.66
X_9	80.21	47.03	62.68	59.96	(+)17.53

The industrywise group difference analysis provided above shows results which are in consonance with the previous aggregative results, but are also different from them in certain respects. In the aggregative analysis it was observed that value of the most of the performance variables of the O.O. firms were above that of the F.I.O. firms. This trend is again observed for the Textile indutries for both the periods, with of course some exceptions. The observations in the case of Chemical industry, is of course, different to a great extent. Here most of the variables. except X_1,X_8 and X_9 of the F.I.O. firms are greater than that of O.O. firms. In most of the cases, debt-equity ratio(X_7) of F.I.O. firms are significantly higher. This means that these firms are in a higher risk class. In the case of Engineering industry, there are mixed results, but the inclination is more towards the result of the aggregative analysis. Such variations in results stem from inter industry differences in characteristics. However explicit reasons for this may be identified from our analyses in the latter sections.

Another observation which draws our interest is that, for the Engineering industry no statistically significant differences exist for any performance variable. This assumes importance, because 25% of the sample firms are in this category. Statistically significant differences exist for Textile and Chemical industries and these will be analysed in the disussions that follow.

A careful study of the tables show that significant diffrences for growth rates, debt-equity ratios and valuation ratios occur most frequently. Growth rates of assets and sales are statistically significantly different for the two groups in textile

industry. It can be said that the F.I.O. firms with lower growth rates show financial behaviour which tends towards behaviour of owner controlled firms.

The results of the Chemical industry however are quite different and here the growth rates of the O.O. firms are lower than that of F.I.O. firms and in the case of the 3 year period it is stastically significant. This is also prevalent in the Engineering industry but at a lower magnitude.

Valuation ratio is another variable, where the results, both in case of the aggregative analysis and industry wise analysis are in line with the hypothesis that was formulated. In all the cases (except Engineering - 5 year period) valuationratio of O.O firms are higher than that of F.I.O. firms and the difference is statistically significant for both Textile and Chemical industries. Since profitability ratios are higher for O.O. firms (though not statistically significant) this could probably explain to some extent the higher valuation ratios. Lower valuation ratio and profitability ratios of the F.I.O. firms point out that their behaviour is somewhat similar to management controlled firms.

The magnitude of difference in X_6 and X_8 are very nominal in most cases and evidence of statistically significant differences are not found. It may thus, well be assumed that the characteristics of the two groups of firms regarding this ratio is nearly the same. However, at this stage we will refrain ourselves from making any serious comments on the issue, i.e. whether goal of firm changes with rise in institutional holding. Nevertheless, three major variables i.e. profitability, growth and valuation ratios in general show a patterned behaviour.

Again, it should be cautioned that inferences from this type of simple analysis may not be neat enough. Incorporation of industry characteristics and subtle relation between the variables should be identified before drawing conclusions. However, before going into these discussions, a simple statistical analysis, commonly known as 'Distance Analysis' has been performed in the next section. This analysis will help to identify the variables that can discriminate between different groups of firms.

3.6. *Distance Analysis*

So far in the previous section we have seen through test of differences of means that there are some variables which can discriminate between the groups of O.O. and F.I.O. firms. Now, it becomes necessary to measure the extent of discrimination achieved by the 'significant' variables. Putting it in another way, it is necessary to measure the degree of overlap between the groups with respect to these variables. For example, if on the basis of observed values of one of these variables, we try to classify the entire population of firms, into the *a priori* groups of O.O. and F.I.O. firms [using of course the percentage of equity holding by financial institution,] the proportion of firms misclassified as a result of this exercise would given us some idea of the extent of discrimination between groups achieved by the variables and could serve as an index of the degree of overlap between them.

This probablity of misclassification can be simply found out by using the 'Mahalonobis Standarised Distance Analysis.'[P.C. Mahalanobis, 1936] Model. According to this method the distance between the two groups is defined as being equal to [d/s], where 'd' is the diffrence between the means of the two groups and 's' is

an estimate of their common standard deviation. If the variables arenormally distributed and have equal variance in both groups and the two populations are of the same size, there is a simple relationship between [d/s] and the probability of misclassification. Some values of this probability of misclassification for given values of [d/s] are shown below :-

[d/s]	Probability of misclassifications(%)
0.000	50
0.251	45
0.501	40
0.771	35
1.049	30
1.349	25
1.683	20
2.073	15
2.563	10
3.290	5
4.653	1

Adapted from Ajit Singh 'Take Overs' Cambridge University Press, 1971, p.69.

The figures indicate that the two groups are indistinguishable, i.e. the probabilitis of misclassification is maximum (50%) when [d/s]=0. In general as the difference between the means increases and the estimate of their common standard deviation decreases the probability of misclassification decreases. Although strictly speaking the relationship between d/s and the probability of misclassification holds only under the stipulation mentioned above, the statistics d/s can nevertheless be used as a

rough index of the degree of overlap for most of the variables of the present study.[1]

Tables 3.6 show mean differences and distance between two groups classified according to institutional equity holding for the whole sample and the three different industries.

Tables 3.6

Standarised Distance between O.O. firms and F.I.O. firms

Aggregate and Industrywise analysis

(a) Aggregate data - 5 year period (N_1=33, N_2=67)

Variables	Difference of means	Common standard Deviation	[d/s]
X_1	1.29	5.28	0.24
X_2	0.70	3.92	0.18
X_3	3.42	11.51	0.30
X_4	1.49	9.65	0.15
X_5	4.50	25.09	0.18
X_6	2.02	9.91	0.20
X_7	31.00	44.80	0.69
X_8	6.94	29.10	0.24
X_9	30.00	53.16	0.56

(b) Aggregate data - 3 year period (N_1=33, N_2=67)

Variables	Difference of means	Common standard Deviation	[d/s]
X_1	2.13	5.71	0.37
X_2	1.12	4.21	0.27
X_3	7.09	18.10	0.39
X_4	7.09	16.20	0.43
X_5	3.29	22.60	0.15
X_6	1.73	11.48	0.15
X_7	40.04	54.15	0.74
X_8	8.71	31.91	0.27
X_9	25.48	51.99	0.49

(c) Textiles - 5 year period (N_{1T5}=14, N_{2T5}=17)

Variables	Difference of means	Common standard Deviation	[d/s]
X_1	1.80	4.79	0.38
X_2	1.79	3.98	0.45
X_3	7.68	10.65	0.72
X_4	7.39	5.36	1.38
X_5	9.48	32.50	0.29
X_6	0.78	8.23	0.09
X_7	21.75	35.50	0.61
X_8	1.77	30.66	0.06
X_9	29.13	34.64	0.84

(d) Engineering - 5 year period ($N_{1E5}=8, N_{2E5}=17$)

Variables	Difference of means	Common standard Deviation	[d/s]
X_1	2.50	4.56	0.55
X_2	1.23	3.39	0.36
X_3	3.55	10.91	0.33
X_4	6.04	8.99	0.67
X_5	5.69	24.46	0.23
X_6	1.39	9.47	0.15
X_7	26.98	37.11	0.72
X_8	4.29	14.63	0.29
X_9	8.77	39.94	0.24

(e) Chemicals - 5 year period ($N_{1C5}=6, N_{2C5}=9$)

Variables	Difference of means	Common standard Deviation	[d/s]
X_1	2.46	3.07	0.80
X_2	0.04	2.55	0.02
X_3	9.93	11.58	0.86
X_4	9.27	9.95	0.93
X_5	5.62	15.87	0.35
X_6	4.15	5.97	0.69
X_7	44.09	30.26	1,46
X_8	5.42	35.60	0.15
X_9	38.73	35.24	1,10

(f) Textiles - 3 year period ($N_{1T3}=14, N_{2T3}=17$)

Variables	Difference of means	Common standard Deviation	[d/s]
X_1	2.92	5.94	0.49
X_2	2.34	4.35	0.54
X_3	15.11	22.52	0.67
X_4	6.66	11.18	0.59
X_5	8.94	22.45	0.40
X_6	2.35	9.67	0.24
X_7	3.10	25.38	0.12
X_8	15.89	29.40	0.54
X_9	26.46	29.74	0.89

(g) Engineering - 3 year period ($N_{1E3}=8, N_{2E3}=17$)

Variables	Difference of means	Common standard Deviation	[d/s]
X_1	2.26	5.28	0.43
X_2	0.74	3.14	0.24
X_3	1.09	17.13	0.06
X_4	3.58	13.28	0.27
X_5	1.87	17.57	0.11
X_6	3.46	12.17	0.28
X_7	26.37	39.17	0.37
X_8	4.57	14.07	0.32
X_9	4.29	37.18	0.11

(h) Chemicals - 3 year period ($N_{1C3}=6, N_{2E3}=17$)

Variables	Difference of means	Common standard Deviation	[d/s]
X_1	1.02	4.50	0.23
X_2	0.60	4.33	0.14
X_3	11.52	12.46	0.92
X_4	1.48	21.56	0.07
X_5	6.41	23.15	0.28
X_6	6.50	8.75	0.74
X_7	48.52	30.93	1.56
X_8	6.66	39.87	0.17
X_9	17.53	53.49	0.33

The above tables clearly demonstrate that for the aggregate data, the distance between the two groups is not significant. The value of / d/s / for most of the variables is less than 0.5 showing that there may be a 40-45% chance of misclassification. Though the / d/s / statistic holds good for samples of unequal sizes, yet it may be pointed and here, that, since the sample of F.I.O.firms are double in number when compared to the O.O. sample, therefore some minor distortions may have crept in. Samples nearly of equal size would posibly have improved results. However the picture shows some improvement when the industry-wise analysis is undertaken. Here many variables have a / d/s / value of more than 0.7 indicating a probabilities of only 35% of misclassification. Special mention may be made to the valuation ratios, debt-equity ratios where the average probability of misclassification is 30-35%. For the Chemical industry, the variable X_7 (for both the periods) has only a 20% chance of misclassification. In general this test does not show large

statistical difference between two groups of firms. In other words behaviour of firms do not show significant variation with rise in institutional holding.

The tests in the previous section however showed us some significant differences in performance variables. Another alternative to test the hypotheses may be taking recourse to non-parametric tests. The findings of the parametric tests and non-parametric tests may be considered together to arive at valid conclusions.

3.7. *Non-Parametric Statistical Analysis*

3.7(a) *Rationale*

The underlying assumptions of parametric test statistics that have been relied so long may be stated as follows :- (i) populations must have a normal distribution (ii) population must be homoscedastic (iii) variables involved must have been measured in at least an interval scale etc. These conditions are not ordinarily tested, they are generally assumed to hold good. The meaningfulness of the results of a parametric test depends in the validity of these assumptions.

A non-parametric test on the other hand does not specify conditions about the parameters of the population from which the sample was drawn. Obviously, there are a few assumptions of most nonparametric statistical tests i.e. the observations are independent and that the variable under study have underlying continuity. However these assumptions are fewer and weaker that those associated with parametric tests. Moreover non-parametric tests do not require measurement so strong as that required for the

parametric tests; most tests apply to data in an ordinal scale and also in some case to a nominal scale.

In this study in case of non-parametric tests, data have been changed from scores to ranks. Such methods may draw criticisms that 'they do not use all the information in the sample', or that 'they throw away information'. To find a reply to this objection, it would be worthwhile to answer this question : of the methods available, parametric and non-parametric, which uses the information in the sample most appropriately ? The answer to this question depends on the level of measurement achieved in the research and on the researcher's knowledge of the population. If the measurement is somewhat weak in an interval scale, then parametric tests might generate misleading information which may be more damaging than throwing away information."Moreover, the assumptions which might be made to justify the use of parametric tests usually rest on conjecture and hope, for knowledge about population parameters are invariably lacking. Finally for some population distributions a non-parametric statistical test is clearly superior to a parametric test"... [Whitney, 1948]. It is also necessary to mention here that if sample sizes are as small as n=6 as in the case of Chemical industry, [below 25% firm for this study] the use of non-parametric tests is the best recourse.

(b) *The Mann-Whitney U Test*

This test is used to test whether two independent groups have been drawn from the same population. This is one of the most powerful non-parametric tests, and it is a most useful alternative to the parametric 't' test when the assumptions of the 't' test are sought to be avoided.

In this study, we have samples from two populations -

(A) where institutional holding is equal to or greater than 25%

(B) where institutional holding is smaller than 25% .

The null hypothesis is that A and B have the same distribution. The alternative hypothesis, H_1, against which we test H_o, is that A stochastically differs from B, a non-directional hypothesis.

For the purpose of computation of 'U', for fairly large values of n_1 and n_2 (n_1 = no. of observation in group 1 and n_2 = no of observations in group 2) first, it is necessary to assign rank 1 to the lowest score in the combined ($n_1 + n_2$) group of scores, and then proceed so in ascending order.

Then,

$$U = n_1 n_2 + \frac{n_1 (n_1 + 1)}{2} - R_1$$

or, equivalently,

$$U = n_1 n_2 + \frac{n_2 (n_2 + 1)}{2} - R_2$$

For very large samples ($n_1$and n_2> 20), as n_1 and n_2 increases the samples the sampling distribution of U rapidly approaches the normal distribution. Thus the test statistic U requires a 'Z' transformation in the following manner.

$$Z = \frac{U - (n_1 n_2)/2}{\{(n_1)(n_2)(n_1+n_2+1)\}/12}$$

The results of the Mann-Whitney 'U' test for the whole sample and for the three different industries are given below :-

Table 3.7(a)

Results of Mann-Whitney U Test-An Intergroup Comparison

Variable	Whole Sample n1=33, n2=67		Test Statistic U					
	Z Statistic		Textiles n1T=14, n2T=17		Engineering n1E=8, n2E=17		Chemicals n1C=6, n2C=9	
	5yrs	3yrs	5yrs	3 yrs	5 yrs	3 yrs	5 yrs	3yrs
X_1	0.71	0.65	86.50	79.00	51.00	48.00	11.00	24.00
X_2	0.89	0.99	85.00	75(d)	40.00	63.00	26.00	25.00
X_3	1.61	1.59	50(b)	66(c)	52.00	79.00	24.00	8(b)
X_4	1.57	1.60	60.3(c)	75(d)	55.00	62.00	24.00	20.00
X_5	1.22	1.13	77.50	79.00	53.50	45.00	21.00	25.00
X_6	0.52	0.45	101.00	104.00	60.00	45.00	25.00	23.00
X_7	1.65(d)	1.7(d)	94.00	102.00	49.00	52.00	10.00(c)	28(b)
X_8	0.88	0.94	101.00	85.00	66.00	56.00	26.00	25.00
X_9	1.77(d)	1.72(d)	75(d)	75(d)	60.00	65.00	24.00	27.00

(a) Significant at 1% level (b) Significant at 2% level (c) Significant at 5% level (d) Significant at 10% level.

n1 denotes number of firms in the 'others' group.

n2 denotes number of firms in the 'F.I.C.' group.

Interesting of course is the fact, that these results have a close resemblance with the results of the 't' test carried out in sections 3.3 and 3.5. For the whole sample, differences in debt-equity ratio and valuation ratio are significant at 10% level. For the Textile industry significant differences are observed for 3 and 4 variables respectively. Growth and debt equity ratio also show significant differences for the chemical industry.

Before commenting specifically on whether the results of non-parametric tests confirm the results of the parametric tests it

is necessary to carry out other relevant non-parametric tests like the Wald-Wolfowitz Runs test and the Kruskall-Wallis test.

(c) *The Wald-Wolfowitz Runs Test*

This test is applicable when we wish to test the null hypothesis that two independent samples have been drawn from the same population against the alternative hypothesis that two groups differ in any respect whatsoever. That is, this test can reject H_o if two populations differ in central tendency, variability, skewness, or in other way.

To apply the test to data from two independent samples of size n_1 and n_2 we rank $n_1 + n_2$ scores in order of increasing size. This means, we cast the scores of all subjects in both groups into one order. Then we determine the number of runs in this ordered series. A run (R) is defined as any sequence of scores from the same group (either group A or B).

For large samples (n_1 and n_2 both > 20), the sampling distribution approaches normality. Thus the test statistic R requires 'Z' transformation. This is done by the following formula.

$$Z = \frac{r - \frac{2n_1n_2}{n_1n_2} + 1 - .5}{\sqrt{\frac{2n_1n_2(2n_1n_2 - n_1 - n_2)}{(n_1+n_2)^2 (n_1 + n_2 - 1)}}}$$

The results of this test for the whole sample an for the three different industries are shown in the table below.

Table 3.7(b)

Results of Wald-Wolfowitz Runs Test-An Intergroup Comparison

Variable	Whole Sample n1=33, n2=67 Z Statistic		Test Statistic R: Textiles n1T=14, n2T=17		Engineering n1E=8, n2E=17		Chemicals n1C=6, n2C=9	
	5 yrs	3yrs	5yrs	3 yrs	5 yrs	3 yrs	5 yrs	3yrs
X_1	0.51	0.65	17	13	13	8	8	9
X_2	0.73	0.69	17	13	10	13	11	9
X_3	0.99	1.32	12	10(a)	11	11	11	4(a)
X_4	0.83	0.70	10(a)	15	11	9	9	8
X_5	0.55	0.57	13	14	13	12	10	7
X_6	0.42	0.53	21	17	8	12	9	9
X_7	1.82(b)	1.75(b)	10(a)	10(a)	14	13	4(a)	4(a)
X_8	0.71	0.77	15	11	13	12	9	11
X_9	1.67(b)	1.71(b)	10(a)	9(a)	14	13	5	10

(a) Significant at 5% level. (b) Significant at 10% level n_1 denotes number of firms in 'others' group and n denotes number of firms in 'F.I.O'group

The results of the above analysis are quite in consonance with the results of the 'Mann-Whitney' test and 't-test' carried out earlier. Significant differences are noticed in valuation ratio and the debt-equity ratio. Specially for the debt equity ratio, the whole sample and two industries show differences that are significant . However 'asset growth' shows significant differences in two cases only.

Though this test confirms the results of the earlier tests, little is known about its power-efficiency. Smith [1953] states that empirical evidences indicates that power-efficiency of the Wald-Wolfowitz test is about 75 per cent for sample sizes near 20. Considering this aspect, to ensure further reliability in

results, would be better to carry out the 'Kruskal Wallis' analysis.The Kruskal-Wallis test has a power-efficiency of 95.5 per cent [Andrews 1954] when compared with the most powerful parametric test, the F.test

(d) *The Kruskal-Wallis ANOVA by Ranks*

As mentioned in the previous discussion, this particular test is highly efficient and will be used in this part of the study to try and re-inforce the findings of the earlier sections. The K-W-Anova by ranks is an extremely useful test for deciding whether 'K' independent samples are drawn from different populations. Sample values almost invariably differ somewhat, and the question is whether the differences among the samples signify genuine population differences or whether they represent merely chance variations. This technique tests the null hypothesis that 'K' samples come from the same population.

In the computation of K-W test each of the n observations are replaced by ranks and all the scores from all the samples combined are ranked in a single series. Then the sum of the ranks in each sample is found. The statistic 'H' used in the K-W test is found by the following formula

$$H = \frac{12}{N(N+1)} \sum_{j=1}^{K} (R_j^2 / n_j) - 3(N+1)$$ where, K=number of samples

N = total number of cases R_j = sum of ranks in jth sample.

H is distributed as Chi square with degree of freedom = K - 1

In this analysis K = 2, because there are only two groups. The results of the K-W analysis are shown below

Table 3.7(c)

Results of the Kruskal-Wallis Test-An Intergroup Comparison

Vari-ables	Test Statistic H							
	Whole Sample n1=33, n2=67		Textiles n1T=14, n2T=17		Engineering n1E=8, n2E=17		Chemicals n1C=6, n2C=9	
	5 yrs	3yrs	5yrs	3 yrs	5 yrs	3 yrs	5 yrs	3yrs
X_1	0.55	0.61	0.65	1.29	0.98	1.36	0.55	0.13
X_2	0.75	0.62	0.76	1.71	0.48	0.07	0.01	0.06
X_3	1.02	1.12	5.76(b)	2.90	0.54	0.41	0.12	5.02(c)
X_4	1.64	0.83	3.87(c)	1.71	0.57	0.12	0.13	0.68
X_5	0.56	0.93	1.43	2.35	0.23	1.86	0.50	0.13
X_6	0.03	0.12	0.01	0.01	0.06	1.79	0.05	0.22
X_7	2.75(d)	3.04(d)	1.23	1.02	0.84	0.87	4.01(c)	5.01(c)
X_8	0.04	0.46	0.03	0.76	0.01	0.49	0.01	0.06
X_9	2.84(d)	2.72(c)	4.07(c)	3.89(c)	0.22	0.03	0.12	0.01

Note:- (b) Significant at 2%, (c) Significant at 5%, (d) Significant at 10%

The above table shows that for the variables debt-equity ratio and valuation ratio for the whole sample, the null hypothesis is rejected at 10% level. This actually confirms the results obtained by the earliear parametric and nonparametric tests. The results obtained for the industrywise analysis however do not give us any strong evidence that the samples were drawn from different populations. However, for a few variables, like valuation ratio, and growth ratios in case of Textiles and debt-equity ratio and growth ratio in case of Chemicals significant differences are observed. Detailed discussions on such behavioural differences are not carried out here, because these non-parametric tests were carried out to complemnt the results of the parametric tests only.

It is to be mentioned here, that the non-parametric tests used in this section are not free from criticism. Conversion of interval scale data into ordinal scale data may have subdued some information, thus reducing the credibility of such tests. However, if the findings of the parametric and non-parametric tests are considered simultaneously better inferences regarding the hypotheses under consideration may be drawn.

3.8. *Conclusions*

The empirical studies conducted in this chapter have mainly revolved round the following issues :- Whether it is possible to differentiate of discriminate between the two groups of firms (i) institutional holding higher than 25% (ii) institutional holding lower than 25% on the basis of various financial variables.

A first glance at the relative characteristics gave the evidence that most of the performance variables of the financial institution owned firms were lower than that of the 'other' firms. The financial institution owned firms are virtually government owned firms. These firms are managed by individual or groups on behalf of the government. It is apparently felt that managers failed to efficiently manage the resources entrusted to them by the government.

However, differences in performance are in some cases not statistical significant. Consistent statistical differences are observed in case of valuation ratio and debt-equity ratio mainly However, influence of institutional holding on firm performance cannot in proper sense be measured if the variables are considered one at a time. Univariate analysis can identify only in a

restricted sense the difference between financial behaviour of F.I.O. and O.O. firms.

Specific inferences regarding institutional holding and its relationship with corporate financial behaviour can only be drawn when effect of all interactive variables are considered together. The issues that need to be examined in this context are - what variables other than ownership type affect the performance of the firm ? Whether the cumulative effect of all variables considered together can discriminate between the two groups of firms ? Do financial behaviour of firms improve with rise in equity holding ?

A detailed cross-examination of these issues would be dealt with in the next chapter.

==========

NOTES (CHAPTER THREE)

1. If the samples are unequal in sizes, as is seen in the present case, the statistic d/s can however still be used as a measure of degree of overlap between the groups. Fof a detailed discussion see Ajit Singh, Takeover, Cambridge 1971, pp. 68-69.

2. Kruskal & Wallis (1952) found for small significance levels (10% or less) the true level of significance is smaller than the stated level of significance associated with the Chi-square distribution. This idicates that the Chi-square approximation furnishes a conservative test in many if not most situations.

REFERENCES (CHAPTER THREE)

(a) *Andrews, F.C.* "Asymptotic behaviour of some rank tests for analysis of variance ". Annual Mathematical statistics, 25 (1954)

(b) *Mahalnobis, P.C.* "On the generalised distance in Statistics", proceedings of the National Institute of Science, 12 (1936)

(c) *Smith, K.* "Distribution-free statistical methods concept of power efficiency". Research methods in the behavioural sciences. New York : Dryden (1953)

(d) *Whitney, D.R.* "A comparison of the power of non-parametric tests and tests based on the normal distibution under no-normal alternatives". Annual Mathematical Statistics (1948).

CHAPTER FOUR

INSTITUTIONAL HOLDING - ITS EFFECT ON CORPORATE PERFORMANCE
MULTIVARIATE ANALYSIS :- STAGE 1

4.1. *Introduction*

In the previous chapter, differences of financial characteristics between 'financial institution owned' and firms 'owned by others' were highlighted, using both parametric and non-parametric univariate statistical techniques. Significant differences in performance were found in some cases However, such univariate analysis had the limitation of not taking into consideration the cumulative effects of all the variables on the overall performance of the firm.

The present chapter is designed in a manner, so that refined statistical techniques give us an insight into actual performance of the firm considering several variables together. In other words univariate analysis will be replaced by multivariate analysis to investigate the effects of institutional holding on corporate performance.

Precisely, some of the issues which will be vigorously investigated in this chapter is as follows :-

(1) What is the actual cause-effect relationship between institutional equity holding and performance of firms. Or, in other words, does corporate performance improve or worsen with rise in equity holding ?

(ii) To what extent can differences in performance variables be explained by the degree of equity ownership by institutions together with other related financial variables ?

Examination of these issues will be helpful for a better understanding of the effect of nature of ownership on the efficiency of the firms. Application of various multivariate techniques is a right step in this direction and the findings based on such sophisticated analysis will pose the path for a satisfactory solution of the policy issues of the present study.

The order of discussions of Chapter IV will be as follows:-

1. For illustrative purposes, simple correlation analysis between institutional holding and different performance variable will be carried out.

2. Then, after discussing methodological issues of multiple regression analysis and rationale of selection of variables, the results of the multiple regression analysis will be presented and interpreted accordingly.

3. Summary of the findings of all these exercises will be given at th end of the chapter.

4.2. *Simple Correlation Analysis :- Results and Discussions*

The primary objective of correlation analysis is to measure the strength of degree of linear association between two variables. The sign and fractional number of the correlation co-efficient 'r' (which lies in the range +1 to -1) indicates the direction and magnitude of the relationship between two variables x and y.

Table 4.2 presents the simple correlation co-efficient between different performance criteria used in the study such as profit, growth, valuation ratio, leverage etc. and institutional holding as independent variable. This analysis is mainly presented

for illustrative purposes and will be used as the first step to initiate further discussions. These results may be considered along with the findings based on other multivariate analyses carried out in the latter sections. The hypothesis that is to be tested here is that there is either a negative or positive relationship between institutional holding and different variables (H_1: $r \neq 0$), against the null hypothesis that there is no relationship between them (H_o : $r = o$).

Tables 4.2

Simple Correlation-Co-efficients between Financial Institutional Holding and Financial variables.

(a) Whole Sample (N = 100)

Variables	5 year averages		3 year averages	
	r	t value	r	t value
Pretax profitablity (X1)	-0.935	0.9258	-0.2536	2.5956[b]
Posttax profitablity(X2)	-0.0786	0.7783	-0.1479	1.4226
Growth rate of asset(X3)	-0.2433	2.4833[b]	-0.2689	2.7417[b]
Growth rate of sales(X4)	+0.2016	2.0375[c]	+0.2326	2.3671[b]
Retention ratio (X5)	-0.2623	2.6889[b]	-0.0736	0.7283
Return on net worth (X6)	+0.0375	0.6685	+0.1275	1.2867
Debt-Equity ratio (X7)	+0.3541	3.7483[a]	+0.3226	3.3737[a]
Liquidity ratio (X8)	-0.2228	2.2059[c]	-0.1935	1.9525[d]
Valuation ratio (X9)	0.3646	3.8759[a]	-0.2345	2.3878[b]

(b) Textile Industry (N = 31)

Variables	5 year averages		3 year averages	
	r	t value	r	t value
Pretax profitablity (X1)	-0.0990	0.5385	-0.0535	0.2910
Posttax profitablity(X2)	-0.0962	0.5204	-0.0452	0.2438
Growth rate of asset(X3)	-0.3064	-1.7333[d]	-0.3123	1.7703[d]
Growth rate of sales(X4)	-0.3589	2.0713[c]	-0.3094	1.7521[d]
Retention ratio (X5)	-0.3010	1.6998[d]	-0.2219	1.2255
Return on net worth (X6)	-0.0436	0.2349	-0.1669	0.9115
Debt-Equity ratio (X7)	-0.3025	1.7091[d]	+0.1473	0.8987
Liquidity ratio (X8)	+0.0952	0.5149	-0.0772	0.4199
Valuation ratio (X9)	-0.3593	2.0733[c]	-0.3748	2.1770[c]

(c) Engineering Industry (N = 25)

Variables	5 year averages		3 year averages	
	r	t value	r	t value
Pretax profitablity (X1)	-0.006	0.0288	-0.1484	0.7116
Posttax profitablity(X2)	-0.012	0.0576	-0.0744	0.3567
Growth rate of asset(X3)	-0.1423	0.6894	+0.0182	0.0875
Growth rate of sales(X4)	+0.0362	0.1738	+0.1206	0.5786
Retention ratio (X5)	-0.0503	0.2414	-0.2634	1.2887
Return on net worth (X6)	+0.0883	0.4237	-0.1305	0.6257
Debt-Equity ratio (X7)	+0.0667	0.3202	+0.2339	1.1537
Liquidity ratio (X8)	-0.0455	0.2181	-0.2069	1.0144
Valuation ratio (X9)	+0.1462	0.7087	+0.0895	0.4290

(d) Chemical Industry (N = 15)

Variables	5 year averages		3 year averages	
	r	t value	r	t value
Pretax profitablity (X1)	-0.1151	0.4177	-0.1755	0.6501[d]
Posttax profitablity(X2)	+0.2909	1.0965	+0.2092	0.7713
Growth rate of asset(X3)	+0.3943	1.5469	+0.3985	1.5665
Growth rate of sales(X4)	+0.0439	0.1586	+0.0362	0.1303
Retention ratio (X5)	+0.2815	1.0579	+0.2348	0.87105
Return on net worth (X6)	+0.3001	1.1339	+0.4043	1.5940
Debt-Equity ratio (X7)	+0.3781	1.4726	+0.4825	1.9862[d]
Liquidity ratio (X8)	-0.0769	0.2773	-0.0887	0.3199
Valuation ratio (X9)	-0.4289	1.7120	-0.4539	1.8371[d]

(a) Significant at 1% level, (b) Significant 2% level (c) Significant at level and (d) Significant at 10% level

Generally, it becomes an arduous task to substantiate or generalise any opinion on the basis of zero order correlation analysis. But the information that flows in from such analysis may in no case be considered as trivial. Some of the results available from the above tables are analysed below :-

(a) In general, the whole sample as well as the Textile and Engineering industry shows that a rise in equity holding is to some extent associated with a decline in performance of firms. This result is in congruity with the results obtained in Chapter III, where 'F.I.O.' firms show inferior performances than 'O.O.' firms with respect to most of the variables.

(b) For the whole sample, it is observed that significant relationship exists between financial institutional holding and performance of firms in 12 out of 18 cases. Among these 12 cases, growth rate of sales and debt-equity ratio show

positive significant relationship with institutional holding. The other significant relationships are however, negative.

It is interesting enough, that growth evaluated in term of two variables show contrasting results. In other words growth rates of assets fall and growth rate of sales rise with the rise in institutional equity holding. It seems financial institution owned firms prefer a lower retention ratio, thus resulting in lower funds for asset growth. On the other hand, in line with Baumols Sales Maximising Hypothesis (1967), managers controlling 'F.I.O.' firms seek to achieve higher growth rates. Lower profitability, lower growth rate of assets of FIO. might have influenced their valuation ratio. This is to some extent evident from the fact that negative relationship between financial institutional holding and valuation ratio are significant at 1% level and 2% level respectively for the 5 year and 3 year periods. No attempt is being made in this section to discuss the exact nature of relationships between all the variables. Effect of institutional holding on several variables together will be examined in the latter sections.

(c) In the industrywise analysis, Chemical Industry shows a completely different picture when compared to the other two industries. It should be cautioned here, that findings relating to 'Textiles' and 'Engineering Industries be considered with some reservation. Textile firms include, cotton, synthetic, silk, woolen and also jute textiles. Though all these industries can be grouped under the broad heading - 'Textiles', yet industry structure and characteristics for all these industries are different and might lead to a possible source of bias in the findings. The same logic applies to Engineering Industry which includes 'General

Engineering', "Electrical equipments' and Metal alloys and structures'.

(d) For the textile industry, most of the performance variables are negatively correlated with institutional holding. Even growth rate of sales and debt equity ratio, which had positive results for the total sample, shows significant negative relationships. Out of the 18 cases tested, 8 cases demonstrate significant negative relationship. This points out that in a way corporate inefficiency in this industry rises with institutional holding.

(e) No significant relationship between holding and perfórmnce can be observed from the results in the Engineering Industry. The results for the two periods show, that though the association between holding and performance is small, yet in general, it is negative. These result are again in conformity with those obtained in Chapter III. The exception here is the valuation ratio (X_9), which unlike the other industries show a positive relationship.

(f) As mentioned earlier in Chemical industry relationship between holding and performance is positive in most of the cases. It is in contrast to the results of other two industries. In 6 of the 18 cases tested, this is a negative relationship. Valuation ratio when correlated with holding shows the highest negative correlation coefficients and is significant for the 3 year period at 10% level. Debt Equity ratio (X_7) has positive correlation co-efficients; and in one case it is significant at 10%. This is a sign of increase of riskines of the firms with rise in institutional holding. On an aggregate, results obtained for this industry are mixed and show some deviation from the results of the

other industries. In this case with a lower profitability figure and higher grouth figure, the behaviour of F.I.O. firms do give us a slight hint as behaviour like management controlled firms.

Above analysis though reveals some information, yet it is based on the assumption that institutional ownership is the only factor that influences the performance variables selcted for the study. Apart from equity holding, it is natural that a number of other variables relating to market structure, size of the firms, concentration etc. also may affect the performance of the firms. Again the interactive effects of the different variables taken in this study cannot in any case be ignored. Therefore proper statistical techniques that can really find out the effect of institutional ownership on firm performance considering all related variables must be used. Thus in the next part of the analysis Multiple Regression Analysis has been used.

4.3. *Multiple Regression Analysis*

(a) Some notes on the methodology

Multiple regression analysis deals with the estimation of the conditional mean of a random variable, Y, from several X variables, rather than from a single X. Statisticians have formulated several different mathematical models for this technique. These models differ from one another primarily in the assumption about the variables they include. The basic equation relating these variables may be written as;

$$Y_d = \beta_o + \beta_1 X_{i1} + \ldots\ldots\ldots \beta_p X_{ip} + e_j$$

This equation states that the Y value for the ith individual is a

function of P + 1 constants, the β_s , the values for the ith individual on P independent variables, the X_p and an error e_j.

This equation can be expressed in matrix from

$$y = x\beta + e \quad \text{.....where}$$

$$Y = \begin{bmatrix} y_1 \\ \vdots \\ y_2 \end{bmatrix} \quad X = \begin{bmatrix} 1 & X_{11} & X_{12} \cdots\cdots & X_{1p} \\ \vdots & & \vdots & \\ 1 & X_{n1} & X_{n2} \cdots\cdots & X_{np} \end{bmatrix} \quad e = \begin{bmatrix} e_1 \\ \vdots \\ e_n \end{bmatrix} \quad \beta = \begin{bmatrix} \beta_o \\ \vdots \\ \beta_p \end{bmatrix}$$

In the equation β_o .....β_p are the regression eo-efficients to be estimated and y is th dependent variable and X_{i1}.....X_{ip} are the independent variables.

For the present analysis regression approach has been adopted because of it's clear commonsense interpretation, wide use and scope of direct application to the problems under consideration. With the help of this approach it would be possible to detect the actual influence of institutional ownership over firm performance.

The other parameters connected with multiple regression have also to be introduced. Under the assumption of multivariate normal distribution of variables y, x_1 .....x_p' the multiple correlation co-efficient(R) represents the maximum linear correlation between y and a linear combination of x_1..... x_p. β_p that maximise R, are the elements of the vector of regression co-efficient in multivariate normal distribution. The value of R lies in the range of 0 to +1, unlike the cases of bivariate product moment correlation co-efficient where $-1 \leq r \leq 1$. Futhermore, when some X's are correlated positively and some negatively, with y, it is not appropriate to consider directionality in expressing the

relationship between y and a linear combination of Xs.

The above property implies that the square of R (the multiple co-efficient of determination) expresses the proportion of the total Y variance accounted for by the linear relationship between Y and Xs. The higher R^2, the greater the percentage of the variation of Y explained by the regression plane.

To test the significance of R^2, generally the F statistic is used. If the null hypothesis $H_o : R^2 = 0$ is true, the ratio of the mean square for regression to the mean square for error has the F distribution with P and n-p-1 degrees of freedom. Thus the value of the test statistic.

$$F = \frac{(n-p-1)R^2}{P(1-R^2)}$$

where

n = number of observations

p = number of independent variables

may be compared with the critical value $F_{1-d:p,n-p-1,}$ to test the null hypothesis at the α level that the population multiple correlation equals zero.

To test the serial independence of the error terms, the Durbin-Watson statistic (D.W.) is used : this test is specially applicable to small samples.

It is measured by,

$$d = 2 (1 - \bar{\rho}) \text{ where } \bar{\rho} = \frac{\sum e_j e_{j-1}}{\sum e^2_{j-1}}$$

If there is no autocorrelation $\rho = 0$ and $d = 2$. However, the value of D.W. may lie between 0 and α depending upon the nature of autocorrelation.

4.3b) Selection of & Discussion on Variables for Multiple Regression

As stated earlier, apart from institutional holding a number of other variables mainly relating to market structure and size also influence the performance of the firm. After careful consideration, the variables that have some effect on different performance indicators are selected and discussed below.

(i) Profitability :-

Explanatory variables of profitability mainly relate to market structure, concentration ratios, barriesrs to entry and size. High concentration ratios, barriesrs to entry are generally expected to have association with higher profitability because they allow control over market prices. Large market shares give firms the dual advantage of share based product differentiation and increased bargaining power by operating in oligopolistic groups and thus, consequently yield high profitability. Empirical studies showing relationship between these variables and profitability are contradictory, Therefore the magnitude and direcion of the association that might exist between the variables is still not explicitly known. A brief review of some of the studies in this context would be now appropriate.

L.W.Weiss (1963) after studying US manufacturing industry 1949-58, found that average after-tax profits as a percentage of shareholders' equity was strongly and positively correlated with concentration. K.D.George (1971) studied the relationship between profits, concentration and barriers for slow and fast growing companies. Major findings of the study were - high concentration and barriers to entry and important variables explaining the variation in the level of profitability between industries. There

is a significant relationship between profitability and growth, and the relationship between concentration, barriers and profitability also holds within groups of industries clasified according to growth rates. Kamerschen (1968), Collins & Preston (1966), provided evidence supporting the thesis that the relationship between concentration and profitability is linear. Again empirical works by Bain (1951), Mann (1966), Schwartzman (1959), demonstrated that barriers to entry and concentration ratios apparently exert independent and significant influences on rates of return.

In contrast to these positive results Stigler (1963) found no relationship between profitability and four firm concentration ratio in U.S. manufacturing industries for the years 1947 to 54. Katrak's (1980) study in the Indian context also revealed the lower profitability was associated with high concentration. He argued that highly concentrated industries were subject to high degree of antimonopoly regulation and thus showed lower profitability. However Sawhney and Sawhney (1973) found a direct relationship between profit rate and concentration in a large number of Indian industries. Again inconclusive results in this respect were reported by the study of Gupta (1968).

However, the major difficulty in computing concentration ratios is that firms, and particularly large firms do not fit neatly into a particular industry. Using a three digit classification involves including many firms much of whose activities lie outside those industries to which they are classified, while a 2 digit classification includes a wide variety of market types in terms of both structure and demand growth.

In this study, an alternative approach is considered to

combat this problem. Companies have been identified as MRTP and Non-MRTP Companies as a proxy to measure their market power. Dummy variables 0 and 1 have been used respectively to identify these firms. In the Indian context, we believe, the approach is not only less disputable but will also relieve us from making any gross approximations for measuring market power of the companies.

Again, whether size of the firm has any influence on profitability is open to question. There are several studies that have examined the probable relationship between profitability and size. Samuels and Smyth (1968) examined a sample of 186 UK companies and found that profit rates and size of firms were inversely related. The results of Singh and Whittington's (1968) study was based on more extensive data and a larger number of tests. They used two measures of profitability, pre-tax rate of return on net assets and post-tax rate of return on equity assets. The author found that, in general, the degree of dispersion of profitability decreases with the size of the firm, which is in consonance with the results of Samuels & Smyth. They detected a slight tendency for profitability to rise with size, but since the differences on average profitability between class sizes were on the whole statistically significant, they concluded that there is no systematic relationship between average profitability and size. However, in contrast to these studies Hall & Weiss (1967) found that size does tend to result in high profit rates. Though, there are contradictions, yet one common feature for all the studies were - size was measured either on the basis of net assets employed or sales.

On the basis of Downie (1956) - Penrose (1959) - Marris

(1964) approach, one could logically expect that there exists a dual relationship between growth and profitability. On the one hand profits are necessary for growth and hence the more profitable the firm, the more rapid the maximum possible rate of growth : on the other hand, growth eats into profits and hence faster the rate of growth the less profitable the firm. Thus growth depends on profitability and profitability depends on growth. References to empirical studies will be made later in the discussions that follow.

Other than this variable there is of course, the percentage of equity holding by financial institutions that are expected to affect firm profitability. In the simple correlation analysis, there existed in general some negative relationship. This section will reveal what is the actual relationship of these variable together with the other variable stated above.

$$X_1 = \beta_0 + \beta_1 E + \beta_2 A + \beta_3 S + \beta_4 X_3 + \beta_5 X_4 + \beta_6 MR$$

where X_1 = pre-tax profitability

E = percentage of equity holding by financial institutions

A = assets in the beginning year

S = sales in the beginning year

X_3 = Growth rate of assets

X_4 = growth rate of sales

MR = dummy variable indicating MRTP company

The explantory variables for post-tax profitability shoud remain

same as those of pre-tax profitability. However, there is the need to include one more variable, because this variable helps in reducing the absolute amount of taxes. This variable is the debt-equity ratio, or the leverage of the firm. Various theories regarding leverage have been advanced by researchers like David Durand (1959), and Modigliani and Miller (1958). Without going into the details of these theories it can be said debt-capital acts as a tax shield and thus debt-equity ratio has and effect on post-tax profitability. For example let there be two firms having exactly equal amount of capital 'C' and subject to the same tax rate 'T'. Now let the capital structure of the first firm be comprised of only equity capital and for the second firm let there be 50% debt and 50% equity capital Symbolically for Firm 1 [C = E + E = 2E] and for Firm 2 [C = D + E] where 'E' means equity and 'D' debt. If 'R' be the rate of return on capital and 'I' by debt interest rate (conditions R > I), then :-

Post tax profits of Firm 1 = 2ER (1-T)

Post tax profits of Firm 2 = RE + D(R-I) (1-T)

This a very simplified model and does not include variables like the cost of capital, provision for depreciation etc., but it is sufficient to show that post-tax profits of the 2nd Firm is higher than that of the first firm. This is because of the factor DI, or the Debt-interest.

Thus from the above discussion the regression equation taking post tax profitability (X_2) as the dependent variable can be formed.

$$X_2 = \beta_0 + \beta_1 E + \beta_2 A + \beta_3 S + \beta_4 X_3 + \beta_5 X_4 + \beta_6 MR + \beta_7 X_7$$

The variables have the usual meanings as before and X_7 is the

debt-equity ratio.

(ii) Growth :-

Growth of firms as stated in the discussion on managerial theories does not solely depend on the type of control, but on several other factors like size, profitability and investment opportunities. These factors differ greatly accross firms and industries. However, previous researchers have assumed that firms within the same industry have similar investment opportunities. This assumption will be applied in the present analysis also.

Marris (19640, Baumol (1959) and Radice (1971) in their studies were mainly interested to show the impact of control on the growth of the firm. Findings of these empirical studies are completely in line with the mangerial theories of the firm that emphasises manager's attempts to maximise firm growth subject to some minimum performance criteria. Alternatively studies by Elliot (1972), Kamerschen (1968) and Kania & Mckean (1976) in this respect have mostly remained inconclusive.

A systematic relationship between the rate of growth and size of firms might take the form of an association between average rate of growth and size class or between the extent of dipersion of growth rates and size class.[1] Empirical studies in this respect do give some conclusive results. Samuels (1965) after examining a sample of 400 firms in U.K. (period 1950-51 to 1959-60) found that larger firms were growing at a significantly faster rate than smaller firms. He also found that the degree of variability of growth within a given size class did not differ between larger and smaller firms. Single and Whittington (1968) conclude that their study does not support the existence of a systematic relationship

between average growth rates and size of the firm, altough they note a tendency for the largest firms to grow faster. On the other hand, firms above a certain minimum size were found to have a lower variance of growth rates and more uniform rates of growth, than smaller firms. This part of the conclusion conflicts with Samuel's study.[2] Again a well known study of the United States provides support for the Cambridge Study's conclusion. Hymer and Pashigian (1962) found that average growth rates did not differ for firms of different sizes but there was a systematic tendency for variance of growth the decrease with size.[3]

It was mentioned in earlier discussions that there exists a dual relationship between growth and profitability, i.e. growth depends on profitability and profitability depends on growth. In empirical studies, according to Eatwell (1971), "when we examine the contemporous long run average growth-profitability records of a cross-section of corporations, we should expect to find a scalter engendered by the simultaneous operation of the two relationships discussed above, which in simple linear form, may be formulated as

$$G = \alpha + \beta p + \varepsilon$$

$$P = \gamma + \delta G + \mu$$

However, testing of comprehensive models embodying these two relationships in which growth and profitability are simultaneouly determined has so far not proved posible. Singh and Whittington (1968) explicitly disclaim having attempted to do so. They did however examine the relation-ship between the two variables on the assumption that profitability explains growth. They tried on several regression models and found that a simple linear relationship between the two variables on the assumption that

profitability explains growth. They tried on several regression models and found that a simple linear equation relating growth to profitability was most appropriate. Post-tax returns on equity provided a better 'explanation' of growth than pre-tax net assets return. On average, profitability was found to 'explain' about 50% of the variation in growth rates between firms, a 1% point increase in post-tax equity return being associated with a 0.7% point increase in growth rate. From the above results it is evident that a strong positive relationship exists between growth and profitability.

Another important, variable which should be included to explain asset growth is 'retention ratio (X_5). It is known that internally generated funds are one of the most important sources of financing capital investment. Consequently, the determination of the retention policies of a firm will be a decision of considerable importance for the firm's future growth prospects. The assumption of linear relationship between growth and retention ratio was used by Gordon (1962), in his dividend model, where he stated that 'g = b',. Here 'g' eymbodies growth rate, 'b' the retention ratio and 'r' the rate of return on equity.

Thus, taking into consideration the variables discussed above and the extents of equity holding by finacial institutions as the explanatory variables, the following regression equation can be formed.

$$X_3 = \beta_0 + \beta_1 S + \beta_2 A + \beta_3 E + \beta_4 X_2 + \beta_5 X_5$$

Again, for explaining sales growth, instead of including X_s, inclusion of the dummy variable accounting for market power should be proper. Thus the equation can be written as :-

$$X_4 = \beta_0 + \beta_1 S + \beta_2 A + \beta_3 E + \beta_4 X_2 + \beta_5 MR$$

(iii) Retention

The dividend decision of a firm is influenced not only by quantifiable factor such as rates of return or cost of capital as Gordon (1962) and Walter (1963) suggest, but also by other subjective variables like (i) managements' attitude and (ii) Current dividend pay-out practices in competitive firms. However previous discussions on growth of firms, indicate that, internal financing or retention of profits is a primary factor in asset acquisitions. Again Walter (1963) and Gordon (1902) infer that for a growth firm, (i.e. where rate of return is greater than the cost of capital), the optimum retention ratio is 100%.[4] According to them, as stated before 'g = br', and if under any circumstance we assume that the growth rates are predetermined then b = g/r, i.e. retention becomes a function of growth and returns. However in contradiction to this, Modigliani and Miller (1961) suggest that under condition of perfect capital markets and absence of taxes, divided policy of a firm is irrelevant.

Again, since dividends are paid out of after tax profits, therefore, it is but natural to infer that the retention rate is also influenced by it. However, any regression involving post-tax profitability as explanatory variable of retention ratio, (which also contains the same as numberator) may contain spurious correlation since the identical variable post-tax profits appears on both side of the equation.

The inclusion of the above stated variable also draws in

the variable debt-equity ratio. Debt-equity ratio acts as a tax-shield, influences after-tax profits and hence indirectly affects the retention ratio. From another angle, if a firm can draw more funds from the capital market, suppose in form of debts it would have to depend less or internal finance, i.e. an increase in debt-equity may be accompanied with a decrease in retention ratio.

Payment of dividends, also may depend on the availability of cash or other similar liquid assets. It can be inferred that lower liquidity of a firm would decrease the pay-out ratio or conversely would increase the retention ratio. Though such straightforward relationships can be difficult to prove, yet inclusion of liquidity ratio as an explanatory variable of retention ratio would in no case be improper.

Lastly, it would be interesting to know how institutional holding, together with these variables, explains the variability in retention ratio. This would bring out wheter financial institutions prefer to have current dividends from companies in which they hold equities, or they prefer to wait for future capital gains.

On, the basis of the above discussions, the repression equation taking retention ratio as the dependent variable can be formed.

$$X_5 = \beta_0 + \beta_1 E + \beta X_2 + \beta_3 X_3 + \beta_4 X_7 + \beta_5 X_8$$

where the variables have their usual meanings

(iv) Return on Net Worth

This ratio measures, the rate of return on equity

investment. In many of the ealier studies, earnings to equity equity has been used to measure efficiency of the firm instead of profit rate. Obviously, return on net worth has a direct relation with profit rate, because the former variable is only a part of post tax profits. Therefore the variables that could explain post-tax profitability can easily explain return on net worth. Special mention here may be made to leverage or debt-equity ratio again. It is upon this factar that the returns on net worth swings up. This can be understood from the following equation.

$$\text{Earnings on Equity} = \frac{EAIT}{E} = r(1-t) + \frac{D}{E}(e-i)\ (1-t)$$

where EAIT = Earnings after Interest & Tax, E = Net Worth

r = rate of return, D = debt capital, i = rate of debt interest and t = rax rate.

This simple linear relationship shows us that earnings on equity increase with increase in leverage.

Thus from the above discussion the following regression equation taking 'return on net worth' as the dependent variable can be formulated

$$X_6 = \beta_o + \beta_1 S + \beta_2 A + \beta_3 E + \beta_4 X_3 + \beta_6 X_7$$

(the variable have their usual meanings)

(v) Leverage

The effect of leverage on post-tax profitability, retention policies and return on net worth have already been discussed. Basically, this variable is one of the most important factors that effect major financial decisions of corporate bodies.

It is known that post-tax profitability is affected by D/E ratio, but wheter the converse is also true remains to be explored. However, assuming that a firm wishes to maintain a stable

EPS, throughout a certain period, then it has to monitor the D/E constantly with the help of EBIT-EPS analysis technique. This is more relevant in situations of fluctuating returns and changing tax rates. Therefore, under these conditions, post-tax profitability can explain variations in D/E ratio.

Two other important factors governing D/E ratio are :- (i) the growth and stability of sales, and (ii) liquidity of a company. A firm, with stable or increasing sales, accompanied by a quich cash turnover ratio can employ a high degree of leverage, because it's debt-servicing capacity will also be high. On the other side, if the firm's sales are unstable, and if in such situations the debt collecting period is also large, then obviously it will affect the liquidity ratio. In such situations firms will prefer to have lower leverages on account of their lower debt-servicing capacity.

Again, the availability of funds, specifically debt-capital, is likely to be influenced by the size of the company, (either measured in terms of sales or assets both). Generally, small companies have lower creditibility and therefore can raise loans at higher interest rates and less convenient terms. These companies must therefore depend more on share capital and retained earnings for financing their projects. Bigger companies, on the other hand, have the innate power to draw in more loans either through liaisons with the financial institutions or from the capital markets by promising lucrative facilities. Study reports[5] on Indian capital market show that new and small firms depend on equity, but established firms depend on debt capital. One of the

reasons for this is, large firms have the fear of diluting their equities base.

Lastly, in line with these variables, financial institutional equity holding may also have some effect on D/E ratio of firms. Multiple Regression Analysis will help bring out how much institutional holding can affect variation in D/E ratio.

From the above discussions, the regression equation taking E/E ratio as the dependent variable can be formed

$$X_7 = \beta_0 + \beta_1 S + \beta_2 A + \beta_3 E + \beta_4 X_2 + \beta_5 X_3 + \beta_6 X_4 + \beta_7 X_8$$

(vi) Liquidity

Liquidity as a financial variable has two dimensions : (i) the time necessary to convert an asset into money; and (ii) the degree of certainity associated with the conversion ratio, or price realised from the asset. In absence of liquidity the firm can become technically insolvent[6], and creditors can step in to realise the value instantaneously by liquidating the firm.

Thus in order to avoid such condition, it is necessary that the firm should have a stable or growing sales accompanied by small debt-collection periods. Low sales and high debt-collection periods usually fail to replenish the stock of liquid resources.

Higher debt in the capital structure also has an effect on liquidity, because debt interest paid in cash drains the cash reserves of a company.

Again, the liquidity position of a comapany may be jeopardized by executing irrational dividend policies. Higher pay-out ratio has always an adverse effect on liquidity. Brittain (1966) found that for a sample of forty large firms over the 1920-60 period, retention was positively related to corporate

liquidity.

Other than these variables, it would be interesting to find whether institutional equity holding has any effect on liquidity.

Thus the regression equation that can be formed is :-

$$X_8 = \beta_o + \beta_1 S + \beta_2 E + \beta_3 X_4 + \beta_4 X_5 + \beta_5 X_7$$

(vii) Valuation Ratio

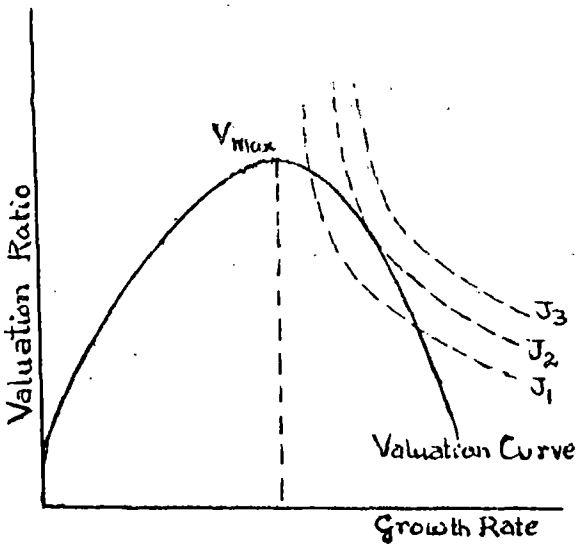
At this stage it is worth mentioning that there are so many factors that might influence the value of shares that it is difficult to quantify or enumerate all of them. Valuation ratio can be thought of as the price of common stock normalised across companies in terms of asset per common share. With this in mind the subsequent discussion concerning the relationship between the valuation ratio and other explanatory variables are made. The actual value that ultimately emerges in the stock market depends largely on the efficiency of the market in terms of its ability to value shares properly. Empirical studies have been conducted to find out relationships between valuation ratio and other ratios like profitability, growth and retention. Some of these are briefed below.

According to Marris (1964), the market value of a firm's existing shares will depend upon the expected profitability of the projects to be undertaken. If the stock market expects the profitability of investment to be high enough, then price of existing shares will stay the same or will rise. If, on the other hand, the expected profitability is below that needed to sustain earnings on existing shares, the price of these shares will fall.

This latter phenomenon is known as 'dilution'.

Again Lintner (1971) developed a model of a purely competitive stock market in which the current market value of a firm's equity is a function of the current dividend, the expected growth rate, the variance of the growth rate and the rate of increase of the variance of growth rate with time. Thus, along with growth rate, the retention policy of a firm has important bearing on the valuation ratio.

Radice (1971) developed a simple model incorporating the relationship between valuation ratio and growth rate, where he showed that, first valuation rate increases with growth rate, but then gradually falls as the growth rate increases. This is shown in the following diagram.



Here J_3, J_2 and J_1 represent the managerial indifference curves. The growth-valuation function underlying the 'valuation curve' specifies the nature of relationship between valuation ratio and rate of growth. Radice (1971) expressed the growth valuation function as :-

$$= D(g).Y(g) = \gamma(g)$$

where D(g) is a general dividend function in which current dividend first rises and then falls as 'g' increases.[7] Since D eventually falls and Y increases, γ may have a maximum (γ max) with respect to 'g', as given in the figure.

With these discussions, on profitability, growth and retention, it is also felt that the variable 'return on net worth' be included in the repression equation, because it is expected, like profitability, a higher return on net worth may have a positive effect on market value.

Other than these, institutional holding may also be able to explain variations in valuation ratio. In simple correlation analysis, it was found that these two were inversely related.

Thus, the repression equation can be formed as :

$$X_9 = \beta_0 + \beta_1 E + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6$$

In the above discussions and formulation of repression equations, different variables in various logical combinations have been used. Though the number of explanatory variables for the dependent variables are not always exhaustive, yet it is felt that keeping into view the scope of the study, these combinations will suffice. The objective of this analysis is to bring out the effect of institutional holding on various financial variables; inclusion of a large number of explanatory variables would have unnecessarily complicated matters.

TABLES - 4.3

RESULTS OF MULTIPLE REGRESSION ANALYSIS

(PERIOD 5 YEARS)

(A) Pre-tax profitability as dependent variable

Industry	S	A	E	MR	X3	X4	R	F	D.W.
	Partial Correlation co-efficients and t values						(R^2)		
Text-iles N=31	0.115. (0.566)	-0.053 (0.260)	-0.141 (0.696)	0.132 (0.652)	0.143 (0.708)	0.286 (1.462)	0.526 (0.277)	1.531	1.624
Engine ering N=25	0.242 (1.052)	-0.233 (1.017)	-0.069 (0.292)	0.042 (0.177)	0.117 (0.499)	0.145 (0.622)	0.359 (0.129)	0.447	1.592
Chemi cals N=15	-0.256 (0.758)	0.229 (0.668)	-0.118 (0.051)	0.256 (0.148)	-0.202 (0.582)	0.199 (0.576)	0.412 (0.169)	0.272	1.613

(B) Post-tax profitability as dependent variable

Industry	S	A	E	X3	X4	MR	X7	R	F	D.W.
	Partial Correlation co-efficients and t values							(R^2)		
Text iles N=31	0.127 (0.616)	-0.070 (0.337)	-0.066 (0.319)	0.212 (1.043)	0.264 (1.311)	-0.012 (0.058)	-0.076 (0.365)	0.518 (0.268)	1.203	1.721
Engine ering N=25	-0.262 (1.112)	0.305 (1.318)	-0.059 (0.245)	0.451[c] (2.082)	0.312 (1.347)	0.461[b] (2.141)	-0.251 (1.067)	0.843 (0.711)	5.952[a]	2.012
Chemi cals N=15	0.265 (0.726)	-0.141 (0.377)	-0.132 (0.035)	0.228 (0.618)	-0.112 (0.029)	0.332 (0.929)	-0.149 (0.399)	0.511 (0.261)	0.354	1.697

(C) Growth rate of Assets as dependent variable

Industry	S	A	E	X2	X5	R	F	D.W.
	Partial Correlation co-efficients and t values					(R^2)		
Text-iles N=31	-0.220 (1.129)	0.283 (1.477)	-0.418[c] (2.256)	0.368[c] (1.977)	0.321 (1.696)	0.619 (0.383)	3.109[b]	1.862
Engine ering N=25	-0.232 (1.041)	0.205 (0.913)	-0.079 (0.347)	0.413 (1.978)	0.293 (1.335)	0.469 (0.220)	1.071	1.542
Chemi cals N=15	-0.515 (1.804)	0.455 (1.531)	0.360 (1.157)	0.138 (0.417)	0.294 (0.924)	0.641 (0.411)	1.255	1.877

(D) Growth rate of Sales as dependent variable

Industry	S	A	E	X2	MR	R	F	D.W.
	Partial Correlation co-efficients and t values					(R^2)		
Text iles N=31	-0.676[a] (4.593)	0.634[a] (4.097)	-0.465[b] (2.575)	0.329[c] (1.742)	0.108 (0.545)	0.784 (0.616)	7.993[a]	2.010
Engine ering N=25	-0.628[a] (3.518)	0.613[a] (3.384)	-0.116 (0.508)	0.364[c] (1.751)	0.119 (0.520)	0.676 (0.457)	3.194[b]	1.985
Chemi cals N=15	-0.665[b] (2.519)	0.566[c] (1.939)	-0.001 (0.001)	0.122 (0.369)	0.075 (0.225)	0.585 (0.342)	0.936	1.597

(E) Retention ratio as dependent variable

Industry	E	X2	X3	X7	X8	R	F	D.W.
	Partial Correlation co-efficients and t values					(R^2)		
Textiles N=31	-0.380[c] (2.052)	-0.140 (0.706)	0.325[c] (1.717)	0.035 (0.173)	-0.007 (0.035)	0.433 (0.187)	1.155	1.375
Engineering N=25	-0.094 (0.041)	0.006 (0.024)	0.162 (0.714)	-0.053 (0.231)	-0.093 (0.405)	0.201 (0.040)	0.160	2.692
Chemicals N=15	0.277 (0.867)	0.119 (0.362)	-0.176 (0.535)	-0.089 (0.268)	-0.316 (1.002)	0.443 (0.196)	0.439	1.468

(F) Return on net worth as dependent variable

Industry	S	A	E	X3	X4	X7	R	F	D.W.
	Partial Correlation co-efficients and t values						(R^2)		
Textiles N=31	-0.085 (0.417)	0.035 (0.169)	-0.259 (1.317)	0.345[c] (1.802)	0.021 (0.010)	-0.698[a] (0.405)	0.723 (0.523)	4.377[a]	2.203
Engineering N=25	0.278 (1.255)	-0.228 (0.995)	0.173 (0.746)	0.437[c] (2.062)	0.431 (0.482)	-0.482[b] (2.333)	0.652 (0.425)	2.225[c]	1.899
Chemicals N=15	0.359 (1.089)	-0.107 (0.303)	0.150 (0.429)	0.160 (0.459)	0.023 (0.066)	-0.147 (0.421)	0.573 (0.273)	0.652	2.765

(G) Debt-Equity ratio as dependent variable

Industry	S	A	E	X2	X3	X4	X8	R	F	D.W.
	Partial Correlation co-efficients and t values							(R^2)		
Textiles N=31	-0.158 (0.766)	0.097 (0.466)	-0.364[c] (1.832)	0.165 (0.802)	0.024 (0.116)	0.113 (0.545)	-0.144 (0.699)	0.365 (0.284)	0.504	1.446
Engineering N=25	0.246 (1.044)	0.201 (0.847)	0.042 (0.172)	-0.414[c] (1.877)	0.151 (0.629)	0.247 (1.053)	-0.008 (0.032)	0.533 (0.284)	0.966	1.535
Chemicals N=15	-0.062 (0.164)	0.337 (0.945)	0.304 (0.845)	-0.227 (0.617)	0.104 (0.276)	-0.378 (1.078)	-0.349 (0.986)	0.704 (0.496)	0.985	1.911

(H) Liquidity ratio as dependent variable

Industry	S	E	X4	X5	X7	R	F	D.W.
	Partial Correlation co-efficients and t values					(R^2)		
Textiles N=31	0.348[c] (1.855)	0.279 (1.451)	0.404[b] (2.207)	0.153 (0.773)	-0.246 (1.269)	0.514 (0.264)	1.797	1.612
Engineering N=25	0.018 (0.079)	-0.566 (0.247)	-0.722 (0.338)	0.017 (0.074)	-0.045 (0.196)	0.123 (0.015)	0.058	0.877
Chemicals N=15	-0.244 (0.754)	-0.034 (0.103)	0.547[c] (1.959)	-0.034 (0.120)	-0.230 (0.709)	0.642 (0.412)	1.261	1.742

(I) Valuation ratio as dependent variable

Industry	E	X2	X3	X4	X5	X6	R	F	D.W.
	Partial Correlation co-efficients and t values						(R^2)		
Textiles N=31	-0.401[c] (2.098)	0.483[b] (2.701)	-0.281 (1.433)	0.301 (1.547)	-0.213 (1.071)	-0.511[a] (2.909)	0.778 (0.605)	6.150[a]	2.113
Engineering N=25	-0.059 (0.253)	0.177 (0.762)	-0.381[c] (1.748)	0.466[b] (2.115)	-0.179 (0.773)	0.297 (1.321)	0.504 (0.254)	1.025	1.960
Chemicals N=15	-0.584[c] (1.902)	0.315 (0.937)	-0.539 (1.809)	-0.084 (0.238)	-0.553[c] (1.875)	0.133 (0.381)	0.827 (0.684)	2.885[c]	2.005

MULTIPLE REGRESSION ANALYSIS

(3 - Year Period)

(J) Pre-tax profitability as dependent variable

Industry	S	A	E	MR	X3	X4	R	F	D.W.
	Partial Correlation co-efficients and t values						(R^2)		
Text-iles N=31	0.050 (0.247)	-0.238 (0.117)	-0.160 (0.793)	0.065 (0.321)	0.593[a] (3.610)	0.056 (0.273)	0.721 (0.519)	4.321[a]	1.976
Engine ering N=25	0.125 (0.533)	-0.108 (0.459)	-0.159 (0.682)	0.100 (0.427)	0.194 (0.837)	0.044 (0.186)	0.320 (0.103)	0.343	1.311
Chemi cals N=15	-0.316 (0.940)	-0.409 (1.267)	0.408 (1263)	0.384 (1.176)	0.336 (1.008)	0.022 (0.063)	0.705 (0.497)	1.381	1.961

(K) Post-tax profitability as dependent variable

Industry	S	A	E	X3	X4	MR	X7	R	F	D.W.
	Partial Correlation co-efficients and t values							(R^2)		
Text-iles N=31	-0.003 (0.016)	-0.042 (0.204)	-0.060 (0.290)	0.502[b] (2.784)	0.089 (0.429)	-0.208 (1.020)	-0.247 (1.224)	0.648 (0.420)	2.382	1.776[c]
Engine ering N=25	0.187 (0.785)	-0.144 (0.600)	-0.066 (0.274)	0.254 (1.083)	0.018 (0.075)	0.130 (0.542)	0.170 (0.712)	0.467 (0.218)	0.679	1.545
Chemi cals N=15	0.261 (0.716)	-0.215 (0.583)	0.385 (1.104)	0.385 (1.102)	0.107 (0.286)	0.022 (0.059)	-0.057 (0.151)	0.660 (0.436)	0.771	1.852

(L) Growth rate of assets as dependent variable

Industry	S	A	E	X2	X5	R	F	D.W.
	Partial Correlation co-efficients and t values					(R^2)		
Textiles N=31	-0.185 (0.918)	0.247 (1.273)	0.376[c] (1.987)	0.541[a] (3.217)	0.229 (1.176)	0.653 (0.426)	3.719[a]	1.720
Engineering N=25	-0.091 (0.399)	0.081 (0.355)	0.006 (0.025)	0.369[c] (1.731)	0.069 (0.298)	0.377 (0.142)	0.628	2.223
Chemicals N=15	-0.392 (1.278)	0.294 (0.925)	0.283 (0.283)	0.451 (1.516)	0.295 (0.929)	0.588 (0.346)	0.953	1.678

(M) Growth rate of sales as dependent variable

Industry	S	A	E	X2	MR	R	F	D.W.
	Partial Correlation co-efficients and t values					(R^2)		
Textiles N=31	-0.358[c] (1.912)	0.398[b] (2.168)	-0.352[b] (1.840)	0.269 (1.399)	0.205 (1.045)	0.584 (0.341)	2.603[b]	1.700
Engineering N=25	-0.521[b] (2.663)	0.538[b] (2.780)	-0.252 (1.135)	0.327 (0.353)	0.080 (1.509)	0.600 (0.363)	2.143[c]	1.821
Chemicals N=15	-0.572[c] (2.093)	0.528[c] (1.866)	-0.071 (0.214)	-0.132 (0.401)	0.267 (0.829)	0.686 (0.471)	1.598	1.922

ND Retention ratio as dependent variable

Industry	E	X2	X3	X7	X8	R	F	D.W.
	Partial Correlation co-efficients and t values					(R^2)		
Text-iles N=31	-0.255 (1.249)	-0.322 (1.709)	0.084 (0.422)	-0.029 (0.148)	-0.165 (0.839)	0.388 (0.151)	0.883	1.476
Engine ering N=25	-0.295 (1.344)	-0.049 (0.215)	0.098 (0.432)	0.339 (1.569)	-0.157 (0.696)	0.426 (0.181)	0.841	1.551
Chemi cals N=15	0.023 (0.069)	0.416 (1.372)	0.251 (0.779)	0.182 (0.555)	-0.104 (0.314)	0.523 (0.273)	0.679	1.621

CO Return on net-worth as dependent variable

Industry	S	A	E	X3	X4	X7	R	F	D.W.
	Partial Correlation co-efficients and t values						(R^2)		
Text-iles N=31	-0.131 (1.223)	0.081 (0.997)	-0.277 (0.378)	0.278 (0.256)	0.113 (0.627)	-0.253 (0.439)	0.491 (0.241)	1.273	1.602
Engine ering N=25	0.277 (1.223)	-0.228 (0.996)	-0.089 (0.377)	0.006 (0.026)	0.146 (0.627)	0.103 (0.439)	0.406 (0.165)	0.594	1.398
Chemi cals N=15	0.487 (1.577)	-0.427 (1.336)	0.466 (1.490)	0.002 (0.005)	0.189 (0.545)	0.458 (1.457)	0.772 (0.596)	1.962	2.522

(P) Debt-Equity ratio as dependent variable

Industry	S	A	E	X2	X3	X4	X8	R (R^2)	F	D.W.
	Partial Correlation co-efficients and t values									
Text-iles N=31	-0.099 (0.482)	0.090 (0.434)	0.209 (0.139)	0.280 (1.400)	-0.189 (0.927)	0.294 (1.473)	-0.354 (1.816)	0.488 (0.238)	1.027	1.565
Engine ering N=25	-0.132 (0.546)	0.159 (0.664)	0.062 (0.254)	-0.229 (0.972)	0.543[b] (2.669)	-0.352 (1.550)	-0.347 (1.565)	0.623 (0.388)	1.538	1.878
Chemi cals N=15	0.187 (0.505)	0.284 (0.075)	0.558 (1.779)	-0.176 (0.474)	0.163 (0.437)	-0.036 (0.095)	-0.129 (0.343)	0.681 (0.464)	0.865	1.899

(Q) Liquidity ratio as dependent variable

Industry	S	E	X4	X5	X7	R (R^2)	F	D.W.
	Partial Correlation co-efficients and t values							
Text-iles N=31	0.313 (1.647)	-0.015 (0.077)	0.425[b] (2.349)	0.056 (0.281)	-0.329 (1.589)	0.560 (0.314)	2.284[c]	1.679
Engine ering N=25	-0.262 (1.181)	-0.289 (1.315)	-0.061 (0.268)	0.225 (1.007)	-0.297 (1.324)	0.461 (0.213)	1.023	1.588
Chemi cals N=15	-0.356 (1.141)	-0.106 (0.966)	0.217 (0.670)	-0.311 (0.982)	-0.143 (0.434)	0.647 (0.419)	1.299	1.697

(R) Valuation ratio as dependent variable

Industry	E	X2	X3	X4	X5	X6	R	F	D.W.
	Partial Correlation co-efficients and t values						(R^2)		
Text-iles N=31	-0.438[b] (2.334)	0.446[b] (2.438)	-0.208 (1.039)	0.331[c] (1.717)	-0.372[c] (1.965)	-0.187 (0.931)	0.713 (0.508)	4.146[a]	1.973
Engine ering N=15	0.323 (1.445)	0.773[a] (5.175)	-0.287 (1.274)	0.591[a] (3.103)	-0.458[b] (2.185)	0.552[b] (2.808)	0.870 (0.757)	9.358[a]	2.123
Chemi cals N=15	-0.622[b] (2.099)	0.119 (0.341)	0.042 (0.119)	0.086 (0.244)	-0.294 (0.871)	0.164 (0.469)	0.549 (0.301)	0.575	1.223

4.3(c) *Results of Multiple Regression Analysis and their Interpretation*

On the basis of the regression equations formed in the immediately preceeding discussion, multiple regression analysis results have been presented in table 4.3. For the purpose of facilitating readibility and better comprehension, both multiple correlation co-efficient (R) and co-efficient of determination (R^2), along with F values have been presented in the tables. Naturally, results presented in table 4.3 will be of much more importance than those in table 4.2.

At the outset, it must be restated that this analysis has been carried out for the three industries only and not for the whole sample. This was done to bring out the industry effect on dependent variables. The following tentative conclusions are drawn based on the results.

(1) First of all, the results given in zero-order correlation analysis (Table 4.2), are more or less confirmed in this section. The negative relationship betwen institutional holding and different performance variables are prevalent in general, except for chemical industry where relationships exist in positive direction. However the magnitude of relationships between institutional holding and other variables, as revealed by simple correlation co-efficients and again by partial correlation co-efficients show some variation. This is considered to be normal, because in multivariate analysis the extent of relationships may even be drastically altered. The discussions that will now be made is in the order of dependent variables mentioned in the study.

(2) The relationship between institutional holding and pre-tax profitability, though negative, is not in any case statistically significant. The results do not suggest whether insttitutional holding can affect pre-tax profitability of firms. This generalisation applies to all three industries considered in the study. Regarding the dummy variable (MR), which is used as an alternative tool of concentration ratio, though positive relation has been found, yet it is not statistically significant.This of course contradicts the results of Weiss(1963), George(1971), Bain(1951), Mann(1966) etc. Again, size in general was not found to exert any significant influences on pre-tax profitability.Size measured in terms of assets was found to have a negative relationship, may be however small, with pre-tax profitability. This somewhat is similar to the results of Sammuels and Smyth (1968). The same result were obtained for the relationship between sales and profitability, except for chemical industry where the relationship was in the reverse direction for both the years. Confirming the Dowmie (1958) - Penrose (1959) - Marris (1964) approach, growth rate of corporations, both in terms of sales and asset are positively related with pre-tax profitability. The results, in this case, for the 3 year analysis are better and for the Textile industry. The relationship is positive and significant at 1% level. Finally, the independent variables in their linear relationship, could not explanin significantly the variance in pre-tax profitability. The exceptional case was of Textile industry for the 3 year period where R^2 had a value of 0.7206 and was significant at 1% level.

(3) Rise in institutional equity holding could not improve the

performance of firms measured in terms of post-tax profitability. This is evident from the results of the partial-correlation co-efficients which show negative sign in all cases, except for the Chemical industry (3 year period). Though these values are not high, or statistically significant, yet they point out that rise in institutional equity holding lead to decline in post-tax profitability, however nominally it may be. Relationship between post-tax profitability and MR is the same as in the case of pre-tax profitability, and for the Engineering industry, the value of partial correlation co-efficient is as high as 0.46 & significant at 5% level. The relationship between post-tax profitability and size measured in terms of both assets and sales also show similar results to that of the immediately previous analysis. Even growth rate, measured by both X_3 and X_4 show positive relationship with post-tax profitability. However, the positive relationship with asset growth, is more closer and is significant at 5% level in case of textile industry (3 year period) and a 10% level for Engineering industry (5 year period). Strange enough is the fact, that the partial correlation co-efficient showing relationship between debt-equity ratio and post-tax profitability is negative in all cases. This implies, that to some extent, higher debt results in lower profitability. The multiple correlation co-efficient (R), which shows the relationship between the linear combination of the independent variables and the dependent variable is significant at 1% level for Engineering (5 year period) and at 10% for Textiles (3 year period). For the others, post-tax profitability was not significantly explained by the independent variables.

(4) Growth rate of assets, show very interesting results for

the different industries, because they move in no definite pattern. For the textile industry, there is a negative relationship between institutional holding and asset growth rate for both the periods examined. For the 5 year period, the value of the partial correlation co-efficient is (-) 0.418, which is significant at 10% level and for the three year period it is (-) 0.37 which is also significant at 10% level. Thus for this particular industry, rise in institutional shareholding leads to a slow down in growth rate. For the Engineering Industry nothing definite can be said because the values of the partial correlation co-efficients are very small and moves in the opposite direction for the two period. For the Chemical industry, the results show that there is a positive relationship between the two variables, though they are not very significant. A point of interest that shoud be mentioned here is that the results agree very closely to that of the simple correlation analysis, and also to that of the tests carried out in Chapter II. It was stated before that 'owner controlled firms' would aim for lower growth rates and 'management controlled firms' would aim for higher growth rates. But the contradictory results obtained in the cases of 'Textile' and 'Chemical' industry leaves one in a state of dilemma and one finds it difficult to state whether financial institution owned firms behave like 'owner' or 'management'controlled firms, and also what is the real objective of such firms.

Among the other explanatory variables growth rate, assets have a positive, though not significant relationship. This agrees with the results of Samuel (1965) and Singh and Whittington (1968), that larger firms tend to grow faster. However, this is

contradicted by the fact that sales show a negative relationship with asset growth rate. Again in line with Singh & Whittington's study, post tax profitability has a positive relationship with asset growth. This positive relationship is significant at 10% level (5 year period) and 1% level (3 year period) for textiles and 10% level (3 year period) for Engineering. Next, corresponding to the theory of Gordon (1962), retention ratio has shown a positive relationship with growth. Finally, the textile industry shows for both the periods, that along with institutional holding, the other variables can explain the variation in asset growth rate at 5% level.

(5) The independent variables relating to sales growth rate resulted in significant R^2 values for the Textile Industry (1% level - 5 year; 5% level - 3 year) and Engineering Industry (5% level - 5 year; 10% level - 3 year). Considering this, the results can be said to be better than that of growth measured by assets. The results point out that sales growth of corporations depend quite largely on the combined effects of institutional holding, profitability, size of the firm, market power etc.

First, referring to institutional holding, it can be seen clearly from the table that the relationship is negative in all the cases. For the textile industry, this negative relationship is significant at 5% level for both the periods under consideration. It is quite clear, considering both the measures of growth, that, higher institutional holding does in no way contribute to growth, but higher institutional holding retards growth rate.

The point that is most interesting is that sales growth is negatively and significantly related to sales for all the three

industries for both the time periods tested. What can one conclude from this ? It seems from this result that firms which have large sales already do not have the incentive to increase the rate at which they can capture markets. This, in the Indian context may be perfectly be-fitting specially when the anti-monopoly regulations are taken into account. Furthermore, after reaching the optimum sales level, increase of market share may result in diseconomies of scale. This may consequently bring in lower profits for the firms. However, a very contrasting picture appears when we find that assets have a positive and significant relationship with sales growth rate. This again applies for all the three industries, for both the time periods tested. Again profitability and the dummy variable MR, both are positively related to sales growth. The positive relation between post-tax profitability and sales-growth is significant at 10% for both Textile & Engineering Industry. The results in this respect agree with that of asset growth rate.

(6) Retention ratio's relationship with institutional holding is found to be negative for Textile & Engineering Industry for both the periods tested. For the testile industry, this negative relationship is significant at 10% level for the 5 year period. It can be inferred from these results that financial institutions prefer current dividends and a higher pay-out ratio. It was found out in the previous analyses, institutional holding was negatively related to growth. Since retained profits are necessary for growth, therefore for 'financial institution owned' firms lower growth rates would necessarily require lower retained profits. Thus the results in this section seem perfectly in line.

The relationship between asset growth rate and retained

profits is found to be positive in all the cases and in the case of textile industry (5 year period) it is found to be significant at 10% level. This confirms the inferences of Walter (1963) & Gordon (1962), that growth of a firm influences it's retention policy. Regarding the relationship of post-tax profitability, for the textile industry at is found that it is negatively related, pointing out that higher profitability results in lower retention ratios. But for the other two industries the results show positive association. Conclusive statements about post-tax profitability and also debt-equity ratio cannot be made because of irregularities in results. In general, however, principles of corporation finance uphold debt as a tax shield, and thus rise in D/E should have raised the post-tax profitabilities). However, for the liquidity ratio, negative, though not significant, relationships have been found. This re-affirms our hypothesis that higher liquidity facilitates firms in formulating lower retention policies.

Lastly, in on case was the R^2 value was found to be large or significant. This means that the linear combination of the independent variables could not sufficiently explain the variations in growth rate.

(7) The effect of institutional holding on Return on Net Worth cannot very clearly be stated from the results obtained in the analysis. The partial correlation co-efficient is negative in three cases, and positive in the other three cases. But none of these results are statistically significant.

Sales exert a negative influence on Return no Net Worth only in case of Textile Industry and a positive effect in case of Engineering and Chemicals industry. The exactly opposite effect is

noticed in case of Assets. The results also show that growth rates measured in terms of both asset growth rate, or sales growth rate have a positive effect on return on net world. This phenomenon is possibly due to the inherent nature of the return on net worth ratio. The numerator contains the elements equity dividend and retained earnings, and the denominator contains net assets. When assets are contemplated to grow, retained earnings rise, thus increasing the numerator and in effect raising the return on net worth. On the other hand, if there is an increase in net assets, or effectively in the denominator, return on net worth will fall. The partial correlation co-efficient relating to growth rate of assets is significant at 10% for the Textile & Engineering Industry for the 5 years period.

It was discussed before that debt-equity ratio acts as a tax shield, and lowers the taxes to be paid. But the results obtained in this part is completely contradictory to our statement. Debt-equity ratio has a negative effect on Return on Net Worth in all the cases examined. For the 5 year period, this negative relationship is significant at 1% level for the Textile Industry and % level for the Engineering industry. the reason for this may be that higher debt, draws out large amounts from the post-tax prifits, and in effect lowers the amount of retained profits lower retention affecting the numberator, makes the return on net worht fall.

Finally, R^2 values are significant for the 5 year period only, at 1% for Textile Industry and 10% for the Engineering Industry.

(8) Contrary to the other performance variables, institutional

holding had a positive correlation with debt-equity ratio of firms. For the chemical industry, in the 3 year period, the value was as high as 0.56. This leads us to believe that with the rise in equity holding by the institutions, the long term debts of the firm also increases. This phenomenon is normal, because firms with already high institutional holding will try to avoid further concentration of equity shares in the hands of the institutions. For this purpose, capital requirements of these firms are met usually by issue of debt. An exceptional result is, however, noticed for the Textile Industry (5 year period) where the negative relationship is significant at 10% level.

Irregular correlation co-efficients obtaned for the variables sales and sales growth, do not lead us towards any conclusive thoughts. However positive correlation co-efficients relating Assets to D/E ratio, help us to re-inforce the argument that larger firms find it easier to mobilise resources through external borrowings Again asset growth and leverage are positively related showing that growing companies mobilise more funds through debt. It was argued before that less liquid firms would employ debt capital in order to maintain its debt-servicing capacity. The results obtained in this portion show a negative relationship between liquidity and leverage. For the textile industry, this negative relationship is significant at 10% level. Though specific resons for this cannot easily be identified, yet it can be contemplated that less liquid firms, employ debts in order to enhance its liquidity.

However, in no case, could the linear combination of the independent variables result in significant values of R. Even

though, for the Chemical industry R values of .704 (5 year) and .081 (3 year) seem large enough to suggest high degree of association between debt-equity ratio and the independent variables.

(9) Higher financial institutional holding requires that the firm be less liquid; at least, this stems out from the results obtained in the analysis. Negative partial correlation co-efficients, except in the case of Textiles (5 year), have been obtained for all the industries. A possible explanation to this is higher institutional holding brings with it the implicit guarantee that term loans or short term loans will always be available on emergency/ thus firms can keep their liquid assets at a somewhat low level.

We had presumed that higher sales and sales growth contribute to liquidity, significant positive results (at 10%) for sales in Textile industry and for sales growth also in Textile industry (5% level for 5 year and 3 year) and Chemical industry (10% level for 5 years) bear warranty to our statement. Except for the Chemical industry, higher retention, leads to higher liquidity, though in very small proportions : this is quite apparent from the results obtaned. Again, as before negative relationship has been obtained between D/E ratio and liquidity.

Finally, none of the R values were significant to suggest definite conclusions.

(10) Financial Institutional equity holding is not very beneficial when the valuation ratio of a firm is considered. Very significant results (Textile-significant at 10% for 5 year period and at 5% for 3 year period; Chemicals - significant at 10% for 5

year period, and 5% for 3 year period) showing negative relationship between these two variable, bear complete testimony to the above statement. Only, the Engineering industry has shown a positive relationship for the 3 year period. But, in general, the results agree with those obtained in simple correlation analysis and the statistical tests conducted in Chapter III, and conclusively point out that rise in equity holding lowers valuation ratio. Since valuation ratio is resultant of (market value/book value), therefore, it is a matter of considerable research whether the numerator or the denominator fall, then which one falls at a faster rate ? The previous results, showing lower profitability and lower growth rate, may have resulted in lower book values for financial institution owned firms. Again, financial institution owned firms, for some reason might not have won great confidence in stock markets and thus may have commanded lower market values of shares. These issues remain open for further research.

Secondly, we had earlier discussied that higher post-tax profitability would have a benefical effect on the valuation ratio. Significant and positive results have been obtained for Textiles (5% level - 5 year period and also 3 year period) and Engineering (1% level - 3 year period). The other results in this respect are also positive. The results completely agree with those obtained by Marriss (1964). However views of Lintner (1971) and Radice (1971) stand contradicted when negative relationships evolve between valuation and asset growth and also valuation and retention ratio. Negative results obtained in case of textile industry for return on net worth lead us to believe that higher returns have in adverse effect on valuation. But this result is contradicted by significant

positive values in case of Engineering industy (3 year period).

Lastly, very high and significant values of R have been obtained in case of all the industries (Textiles - 1% level - 5 year and also 3 year; Engineering - 1% level - 3 year; Chemical - 10% level - 5 year) showing that the independent variables are closely related to valuation ratio.

4.4 Conclusion

The results obtained from multiple regression analysis point out clearly in case of all the performance variables, except debt-equity ratio, higher institutional holding has adverse effects. This makes it very difficult for us to match the behaviour of financial institution owned firms with 'management controlled' or 'owner controlled firms'. To facilitate better comprehension, the hypotheses regarding the financial behaviour of the firms are re-stated here.

H_1 : Profitability of Owner Controlled (O.C.) firms will be > than that of management controlled (M.C.) firm

H_2 : Growth rate of assets of O.C. firm will be < that of M.C. firm

H_3 : Growth rate of sales of O.C. firm will be < that of M.C. firm

H_4 : Retention of O.C. firm will be < that of M.C. firm

H_5 : Return on networth of O.C. firm will be > that of M.C. firm

H_6 : D/E ratio of O.C. firm will be > that of M.C. firm

H_7 : Liquidity ratio of O.C. firm < that of M.C. firm

H_8 : Valuation ratio of O.C. firm will be > that of M.C. firm

However the findings from the simple correlation analysis and multiple regression analysis, present a picture which is in many cases different from the above hypothesis. The relation between institutional holding and various peformance variables in general, as revealed by these tests are briefly stated below :-

(i) Institutional holding and pre-tax profitabilities are negatively related, or in other words, firms with higher institutional holding F.I.O firms have lower pre-tax profitabilities

(ii) Similarly, post-tax profitability is also negatively related with institutional holding. These two findings are in line with hypothesis 1.

(iii) Institutional holding and growth rate of assets are negatively related in most of the cases. This does not confirm hypothesis 2, in the sense that firms with lower institutional holding (O.O.) have higher growth rates

(iv) In the simple correlation analysis, in most cases growth rate of sales is positively related to institutional holding, but in multiple repression analysis, the results are all negative. In all logical sense, we place greater reliance on the latter results.

(v) As revealed by simple correlation analysis, Retention ratio moves in the opposite direction to institutional holding, i.e. disconfirming the hypothesis 4, financial institution owned firms have lower retention ratios. However results of multiple regression analysis confirms the hypothesis, by showing positive partial correlation co-efficients.

(vi) Mixed results have been obtained for return on net worth in both the tests, and definite conclusion about its relation with

constitutional equity holding connot be drawn.

(vii) Debt-Equity ratio rises with rise in institutional holding and shows that F.I.O. firms use higher debt than O.O. firms. This is no manner a good sign, because debt increases the riskiness of the firm.

(viii) Liquidity ratio is in most cases negatively related with institutional holding disconfirming the hypothesis that F.I.O. firms have higher liquidity.

(ix) Again valuation ratio, is negatively related to institutional holding. This is in line with hypothesis 8, where O.C. firms were presumed to have hoghe valuation ratios.

Therefore since firms with high institutional holding have lower profitability, lower return on net worth and lower valuation ratio, therefore in this respect they behave like 'management controlled firms'. But again these firms have lower growth rates in term of assets and sales, & lower retention ratio, Therefore, in this respect they behave like owner-controlled firms. In general, what is evident is higher institution holding leads to inefficiency of firms.

To investigate further into the behavioural characteristics of "financial owned firms" and 'other's and bring out their distinguishing points, it would now be proper to carry out an exercise in Discriminant Analysis taking all the variables together.

NOTES (CHAPTER FOUR)

1) Broadly speaking , the absence of either type of relationship is required if the "Law of Proportionate Effect", or "Gibrat's Law" is to hold good. This law states that the probability of a firm growing at a given rate is independent of it's initial size. However researchers have found that the law does not hold.

2) The major reason for the conflict between the results of Samuels (1965) and Singh & Whittington (1968) was due to the fact that Samuel's study was based on firms from all industries together, whereas the latter authors used industry wise analysis. (4 industries viz. - non electrical engineering , clothing food and tobbaco).

3) Hymer and Pashigian, whose study was not confined to continuing companies, stated that, had it been so confined, their results would have been essentially the same.

4) Walter and Gordon's model is based on the assumptions like --- (i) the firm finances all investments through retained earnings , i.e. debt or new equity is not issued , (ii) The internal rate of return of the firm (r) and the cost of capital (k) of the firm are constant (iii) corporate taxes do not exist etc. Under these conditions they state that:-

(a) Optimum retention ratio is 100% when $r > k$.

(b) Optimum retention ratio is 0% when $r < k$.

(c) There is no optimum ratio when $r = k$, i.e. there is irrelevance of dividend policy in this case.

5) "Existing companies prefer to issue debentures or preference shares mainly for investment institutions. Even when equity issues

are made by them they are mostly in the form od right issues. The reluctance to issue equity shares to the general public by existing management is largely due to the fear of dilution of capital, apprehensions about the probable loss of control over the company."

(Patel committee report . vol. 1, pg. 27)

6) "Technical insolvency" occurs whenever a firm is unable to meet it's current obligations. It differs from "insolvency" in a legal sense , which is defined as the point at which the assets of the firm are less than it's liabilities, and as a result , it has negative net worth. (See James. E. Walter "Determination of Technical Insolvency", Journal of Business , 30, (January 1957).

7) According to Radice (1971) , dividend policy is positively related to rate of profit which is directly related to the rate of growth , but inveresely related to it at high rates of growth.

****

REFERENCES (CHAPTER FOUR)

(i) *Bain, J.S.*, "Relation of Profit Rate to Industry Concentration" Quarterly Journal of Economics, 65, 1951.

(ii) *Baumol, W.J.*, "Business Behaviour ,Value and Growth " Macmillan, New York, 1959.

(iii) *Brittain, John.A.*, "Corporate Dividend Policy" Brookings Institution, Washington D.C., 1966

(iv) *Collins, N.R. & Preston, L.E.*, "Price Cost Margins in Clothing Industry " Journal of Industrial Economics. Volume 15, 1966.

(v) *Downie, J.*, "The Competitive Process" London,Duckworth,1958.

(vi) *Durand, D.*, "The Cost of Debt and Equity Funds for Business" in Ezra Solomon ed. "The Management of Corporate Capital", New York, Free Press 1959.

(vii) *Eatwell,J.*, "Growth Profitability and Size: The Empirical Evidence" in R.Marris & A.Wood eds."The Corporate Economy" Macmillan ,London,1971.

(viii) *George K.D.*, "Industrial Organisation" Allen & Unwin, London, 1971.

(ix) *Gordon, M.J.*, The Investment, Financing and Valuation of Corporations", Homewood, Illinois, 1962.

(x) *Hymer,S. & Pashigian, P.*, "Firm size and Rate of Growth " Journal of Political Economy, LXXX, December 1962.

(xi) *Kamerschen* , "The Influence of Ownership and Control on Profit Rates". The American Economic Review, LVIII, June 1966.

(xii) *Kania, J.J., & Mckean, J.R.*, "Ownership Control and the Contemporary Corporation; A General Behaviour Analysis" KYKLOS. Vol 29 , 1976.

(xiii) *Katrak*, "Cost Price Relationships in Indian Manufacturing Industries", The Journal of Developmental Studies,17, 1980.

(xiv) *Lintner, J.*, "Optimum or Maximum Growth under Uncertainity" Chap 7 in R.Marris & A.Wood eds. "The Corporate Economy", Macmillan, London, 1971.

(xv) *Mann, H.M.*, "Seller Concentration, Barriers to Entry and Rates of Return in 30 Industries, 1950-60" "Review of Economics and Statistics,43, 1966.

(xvi)*Marris, R.*, "The Economic Theory of Managerial Capitalism" Macmillan, London, 1964.

(xvii)*Modigliani, F. & Miller, M.H.*, "The Cost of Capital, Corporation Finance & Theory of Investment" American Economic Review,June 1958.

(xviii) *"do"* "Dividend Policy, Growth and the Valuation of Shares", Journal of Business,XXXIV, October 1961.

(xix) *Penrose, E.*, "The Theory of the Growth of the Firm" Blackwell, Oxford, 1959.

(xx) *Radice, H.*, "Control type ,Profitability and Growth in Large Firms - An Empirical Study" Economic Journal, LXXXI, September, 1971.

(xxi) *Schwartzman, D.*, "Effect of Monopoly on Price" Journal of Political Economy, 67, 1959.

(xxii) *Samuels, J.*, "Size and Growth of Firms" Review of Economic Studies, XXXII, 1965.

(xxiii) *Samuels, J. & Smyth, D.*, "Profits ,Variability of Profits and Firm Size", Economica,XXXV, May 1968.

(xxiv) *Sawhney, P. & Sawhney, B.*, "Capacity Utilisation, Concentration and Price Cost Margins: Results on Indian Industries", Journal of Industrial Economics,21, 1973.

(xxv) *Singh, A. & Whittington, G.*, "Growth Profitability and Valuation ", University of Cambridge, 1968.

(xxvi) *Stigler, G.J.*, "Capital and Rates of Returns in Manufacturing Industries",Princeton University Press, 1963.

(xxvii) *Walter, J.E.*, "Dividend Policy :It's Influence on the Value of the Enterprise", Journal of Finance, May 1963.

(xxviii) *Weiss, L.W.*, "Average Concentration Ratios and Industrial Performance", Journal of Industrial Economics,Vol 12, August 1963.

****

CHAPTER FIVE

COMPARISON OF CHARACTERISTICS OF FINANCIAL INSTITUTION OWNED FIRMS AND OTHERS : MULTIVARIATE ANALYSIS : STAGE II

5.1 *Introduction*

Results of Multiple Regression Analysis in the preceding chapter distinctly showed considerable influence of institutional holding on a number of financial variables. It inspired us to pursue further tests based on other multivariate techniques. The thrust of the present chapter centres round the issue -whether it is possible to discriminate between financial institution owned firms and others on the basis of all the financial variables, or an amalgam of different related variables. There is an oppurtunity to doubt the relevance of the present chapter in the context of it's reliance on multivariate techniques that was also applied in the last chapter. There are at least three arguments in favour of the present analysis. First, if these two approaches produce the same result , it will obviously strengthen reliability of the findings of the study and will increase acceptability of the conclusions based on the findings. Secondly, instead of correlating institutional holding with different performance variables *per se* , attemts will be made to discriminate between the two groups of firms mentioned in the study. This will help to understand whether economic behaviour of the institution owned firm as a group differs from that of others. It is visualised to be an attempt in a new direction. Finally, univariate analysis of chapter three showed that there are significant differences between the groups in case

of many variables. However, results of univariate Distance analysis showed that none of the variables was a good discriminator on it's own. Reliability of the findings of univariate Distance analysis may be open to serious questions , because it was based on restricted assumptions which does not hold good in the present context. Multiple Discriminant Analysis carried out in this present section is free from such assumptions and would produce more reliable results. Further the present analysis is carried out with the hope , that, even if none of the variables was a good discriminator individually, (as was found in univariate Distance analysis) the whole set of variables taken together may achieve a high degree of discrimination.

The order of discussions of the present chapter will be as follows:-

In section (5.2) methodological notes on Multiple Discriminant Analysis (MDA) will be discussed

Section (5.3) will show how the different combinations of variables have been selected for the purpose of the study.

Sections (5.4) & (5.5) mainly will be used to present and analyse the results of the analysis.

Finally, the last section (5.6) will sum up the findings and draw conclusions.

5.2 *Methodological Notes on Multiple Discriminant Analysis.*

When the set of variables involved are independent of one another , measurement of degree of discrimination between two groups becomes simple. On the basis of the discrimination achieved by these variables independently, degree of discrimination which could be achieved by considering all the variables together, can be

easily measured. In terms of the concept used in chapter three, the extent of discrimanation depends on the distance between the two groups. If all the variables were independent of each other , the square of the combined distance betwwen the groups would simply equal the sum of the squares of the individual distances.

Thus,

$$D_p = \sqrt{\sum_{i=1}^{p} (d_i / s_i)^2} \qquad \text{.....(i)}$$

where D_p is the combined distance between the two groups on the basis of 'p' variables taken together and $[d_i / s_i]$ is the distance between the groups on the basis of the i^{th} variable alone.[1]

When variables like profitability, growth, leverage, liquidity, valuation ratio etc. are being considered , one must be aware of the relationships and dependence that exist between them.(detailed discussions on this aspect was made in chapter four) For such dependent variables , there exists no simple relation (as in equation i) between the combined distance and the individual distances. In these circumstances a sophisticated analysis is required which takes into account the interrelationship between the variables. It should be noted that, in general, the relative discriminating powers of the variables considered on their own have no obvious relatioship at all with the relative discriminating power of the same variable in the multivariate context. However, in view of the inter- relationship between the variables, it is only in the multivariate context that a proper assesment of the relative discriminatory powers of the individual variables can be made.

Discriminant analysis methods attempts to answer two basic questions :- First, can the two groups be distiguished on the basis of the set of X measures on which the data are available? In, other words , can it be shown that the groups differ significantly in terms of their means on a linear combination of X variables ? If the answer to this question is yes, then it makes sense to answer the second, viz. how shall a particular individual firm be classified in terms of group membership ?

MDA involves deriving the linear combination of the independent variables that will discriminate best between the *a priori* defined groups. In this study the *a priori* groups are F.I.O. firms (companies having institutional holding above 25%) and O.O. firms (firms having holding below 25%) . The discrimination between the groups is achieved by the statistical decision rule of maximising the between group variance relative to the within group variance.

The discriminant function takes the form :

$$Z = W_1X_1 + W_2X_2 + W_3X_3 + \ldots\ldots\ldots\ldots W_pX_p \ldots\ldots\ldots\ldots (ii)$$

where,

Z = the discriminant score,

W = the discriminant weights,

X = the independent variables.

As the groups involved in the study are two the expression can be written as;

$$Z_{i1} = W_1X_{i11} + W_2X_{i21} + \ldots\ldots\ldots W_pX_{ip1} \ldots\ldots\ldots\ldots\ldots (iii)$$

to represent the value of Z for the i^{th} individual in group 1. (here i = 1,2, ...n).

Similarly for group 2, the equation can be written as:

$$Z_{i2} = W_1 X_{i12} + W_2 X_{i22} + \ldots\ldots\ldots W_p X_{ip2} \quad \ldots\ldots\ldots\ldots\ldots\ldots (iv)$$

The values of the W's in the discriminant equation are chosen so as to maximise the separartion between the two groups.

On the basis of these general principles , different linear models have been developed by three authors, viz. (a) Fisher (1936), (b) Hotelling (1931) and (c) Mahalnobis (1936). The brief contents of each of the models are described below.

(A) Fisher's disriminant analysis :-

In Fisher's discriminant analysis, separation between groups is expressed in terms of the discriminant function for the two groups. If the group means are described as ,

$$\bar{Z}_1 = \frac{\sum_{i=1}^{n_1} Z_{i1}}{n_1} = \frac{\sum_{i=1}^{n_1} (W_1 X_{i11} + W_2 X_{i21} + \ldots\ldots\ldots W_p X_{ip1})}{n_1}$$

$$= W_1 \bar{X}_{11} + W_2 \bar{X}_{21} + \ldots\ldots\ldots\ldots W_p \bar{X}_{p1} \qquad (v)$$

and,

$$\bar{Z}_2 = \frac{\sum_{i=1}^{n_2} Z_{i2}}{n_2} = \frac{\sum_{i=1}^{n_2} (W_1 X_{i12} + W_2 X_{i22} + \ldots\ldots\ldots W_p X_{ip2})}{n_2}$$

$$= W_1 \bar{X}_{12} + W_2 \bar{X}_{22} + \ldots\ldots\ldots\ldots W_p \bar{X}_{p2} \ldots\ldots\ldots \qquad (vi)$$

Now, if $d_i = \bar{X}_{i1} - \bar{X}_{i2}$ denotes the difference between group means on variable X_i and if $D = \bar{Z}_1 - \bar{Z}_2$, then ,

$$D = W_1 d_1 + W_1 d_1 + \ldots\ldots\ldots W_p d_p \ldots\ldots\ldots\ldots\ldots\ldots\ldots \qquad (vii)$$

is the quantity that must be maximised.

D is again a random variable and it's value is influenced by the variability of Z_{i1} and Z_{i2} within two groups. Accordingly, Fisher proposed that the criterion for maximum separation be the maximum of the ratio,

$$D^2 / SS_w = \lambda$$

in which SS_w is the within group sum of squares of the variable Z, defined in equation (ii), and λ is called the discriminant criterion.

(B) Hotelling's T^2 and generalised analysis of variance.

Hotelling showed how the univariate 't' test of the null hypothesis $H_0: \mu_1 = \mu_2$ could be generalised to the multivariate case, i.e. the case in which the null hypothesis is $H_0: \mu_1 = \mu_2$, where μ_1 and μ_2 are the vectors of population means on several variables, $X_1 \ldots . X_p$.

For testing the hypothesis he used a statistic " T^2 ". This statistic is closely related to Fisher's procedure and his statistic " D ". This is given by the equation ,

$$T^2 = \frac{n_1 \, n_2}{n_1 + n_2} (n_1 + n_2 - 2) D^2 \quad \ldots\ldots\ldots\ldots\ldots\ldots (viii)$$

where n_1 and n_2 represent the number of observations in groups 1 and 2 respectively.

(C) Mahalnobis' generalised distance analysis.

The Mahalnobis D_M^2 method can also be used to test the difference between groups. The procedures proposed by Fisher And Mahalnobis , probably based on the earlier work of Hotelling are esssentially equivalent. This can be seen from the equations below:

$$D_M^2 = (n_1 + n_2 - 2)\, D \ldots\ldots\ldots\ldots\ldots\ldots \text{(ix)}^2, \text{ and also,}$$

$$D_M^2 = \frac{(n_1 + n_2)}{(n_1 n_2)}\, T^2 \ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(x)}^2$$

For the purpose of the study ,out of the three models this particular model is chosen. This is solely on the basis of computational facilities available to the reasearcher at present.

To test the significance of D_M^2 , the F statistic will be used. This F will have a distribution with F_1 and F_2 degrees of freedom .(F_1= p and $F_2 = n_1 + n_2 - p - 1$).

The value of F is given by the formula ;

$$F = \frac{n_1 + n_2 - p - 1}{(n_1 + n_2 - 2)} \left(\frac{n_1 n_2}{n_1 + n_2}\right) D_M^2$$

While conducting MDA , two basic assumptions are made:

(i) Multivariate normality of the disrtibutions of the variables used to characterise the group members.

(ii) Equal dispersion (variance - co-variance) matrices across the groups.

With these basic assumptions , the overall significance of the discriminamt functions have been tested by computing D_M^2, and by testing the null hypothesis that $D_M^2 = 0$, where D_M refers to the multivariate distance between the two populations. If the null hypothesis is not rejected at an accepted level of probability, it means that the groups cannot be distiguished on the basis of their multiple characteristics. If on the other hand, the null hypothesis is rejected at an accepted level of probability ,

it suggests that there are real differences between groups and that the computed linear discriminant function discriminates between the groups in an optimal way.

5.3 *Problems of Selection of Variables for the Analysis.*

Turning to the variables used for MDA , although there are many possible combinations of the variables X1 to X9, which can be used, only a few may be meaningful in the context of the issues of the study. Clubbing of variables into different groups to test their joint discriminating powers deserves utmost care to avoid possible bias. In the simplest form if we select all the variables, the controversies over the issue of selection of variables can be avoided. But any combination that falls short of 9 variables should be supported by strong reason to avoid all possible confusions.

For the purpose of the present study, selection and clubbing of variables are guided by the following principles. Wide use of variables used in earlier studies of similar nature, statistical relevance of variables of the variables as reavealed in the preceeding chapters of this study and the interrelationship among the variables are the three points that influenced our decisions while clubbing the variables. Say, for example, the smallest meaningful subset would consist of only two variables ignoring the others, and the best choise is obviously profitability and growth. These two variables are the most important measures of efficiency and have been widely used in the earlier studies. Further, throughout the study it was found that valuation ratio changes significantly with the change in institutional holding. So, valuation ratio along with three closely related variables, X2, X4, and X6 were logically grouped together. Another combination of

variables which was considered to be ecomically meaningful consisted of profitability (both X1 and X2), growth rate (X3 & X4), and liquidity (X8), gearing(X7), and retention (X5). Thus this set would consist of seven variables. It is worthwhile to note that significant statistical relationships were found between these variables in the last chapter. After deep contemplation, finally, five sets of variables were selected for the analysis.

The sets are as follows:-

(i) X1 To X9 .....9 Variables

(ii) X1, X2, X3, X4, X5, X7, X8.....7 Variables.

(iii) X2, X3, X5, X7, X8 .....5 Variables.

(iv) X2, X4, X6, X9 .....4 Variables.

(v) X2, X3.....2 Variables.

5.4 *Findings and Interpretation of Results.*

Following the pattern of chapter four, the analysis has been done separately for each industry and for each of the two time periods 1981-85 and 1981-83. In the tables, the first two coloumns indicate industries and time periods and the fifth coloumn gives the value of D_M^2. The sixth coloumn gives the variance ratio based on D_M^2 which has been shown to have a F distribution with F_1 and F_2 degrees of freedom. F_1 is given in coloumn 3 ; and in coloumn four, in order to indicate the number of F.I.O and O.O. firms in each set of data n_1, n_2 and (p+1) are shown separetely. Finally, coloumn 7. gives the critical F values for F_1 and F_2 degrees of freedom at a 10% level of significance.

Table 5.4

Distance between F.I.O. & O.O. firms: Multivariate Analysis

Mahalnobis D_M^2 for 9 variables (X1,X2,X3,X4,X5,X6,X7,X8,X9)

Industry	Period years	F_1	F_2	D_M^2	F based on D	$F_{F_2}^{F_1}(0.10)$
Textiles	5	9	14+17-10=21	3.306	1.876	1.95
	3	9	14+17-10=21	3.344	2.066[c]	1.95
Engineering	5	9	8+17-10=15	2.414	0.952	2.09
	3	9	8+17-10=15	1.535	0.605	2.09
Chemicals	5	9	6+ 9-10=5	8.161	1.256	3.32
	3	9	6+ 9-10=5	4.578	0.704	3.32

Mahalnobis D_M^2 for 7 variables (X1,X2,X3,X4,X5,X7,X8,)

Industry	Period years	F_1	F_2	D_M^2	F based on D	$F_{F_2}^{F_1}(0.10)$
Textiles	5	7	14+17-8=23	3.009	2.617[b]	1.99
	3	7	14+17-8=23	2.788	2.425[b]	1.99
Engineering	5	7	8+17-8=17	1.988	0.940	2.10
	3	7	8+17-8=17	1.533	0.725	2.10
Chemicals	5	7	6+ 9-8=7	7.971	2.207	2.78
	3	7	6+ 9-8=7	4.452	1.233	2.78

Mahalnobis D_M^2 for 5 variables (X2,X3,X5,X7,X8)

Industry	Period years	F_1	F_2	D_M^2	F based on D	$F_{F_2}^{F_1}(0.10)$
Textiles	5	5	14+17-6=25	1.998	2.645[b]	2.09
	3	5	14+17-6=25	2.751	3.642[a]	2.09
Engineering	5	5	8+17-6=19	1.086	0.976	2.18
	3	5	8+17-6=19	1.491	1.339	2.18
Chemicals	5	5	6+ 9-6=9	7.564	3.771[b]	2.61
	3	5	6+ 9-6=9	5.457	2.727[c]	2.61

Mahalnobis D_M^2 for 4 variables (X2,X4,X6,X9)

Industry	Period years	F_1	F_2	D_M^2	F based on D	$F_{F_2}^{F_1}(0.10)$
Textiles	5	4	14+17-5=26	2.642	4.546[a1]	2.17
	3	4	14+17-5=26	1.998	2.645[c]	2.17
Engineering	5	4	8+17-5=20	0.854	0.767	2.25
	3	4	8+17-5=20	1.402	0.805	2.25
Chemicals	5	4	6+ 9-5=10	7.274	5.036[a]	2.61
	3	4	6+ 9-5=10	4.236	2.933[c]	2.61

Mahalnobis D^2_M for 2 variables (X2 & X3)

Industry	Period years	F_1	F_2	D^2_M	F based on D	$F_{F_2}^{F_1}(0.10)$
Textiles	5	2	14+17-3=28	1.280	4.597[a1]	2.50
	3	2	14+17-3=28	1.035	3.836[b]	2.50
Engineering	5	2	8+17-3=22	0.506	1.316	2.25
	3	2	8+17-3=22	1.402	0.805	2.25
Chemicals	5	2	6 +9-3=12	5.549	9.219[a1]	2.81
	3	2	6 +9-3=12	1.986	3.270[c]	2.81

Notes: a1 denotes significance at 1% level, a at 2.5% level,
b at 5% level and c at 10% level.

The conclusion which emerges overwhelmingly from the tables is that the null hypothesis is rejected almost everytime for the Textile and Chemical industries. For the Engineering industry, the null hypothesis is never rejected. In 15 out of the 30 cases examined, results are significant at 1% level in 3 cases , 2% level in 2 cases, 5% level in 5 cases and 10% level in 5 cases. These results strongly suggest that it is possible, on the basis of multiple characteristics of the firms, and taking into account the inter-relationships between the various characteristics, to reject the hypothesis that the two groups belong to the same population. In specific sense real differences in financial characteristics exist between the two groups.

However, before such conclusions can wholly be accepted, there are certain points to be pondered over. It may be recalled from chapter three, that univariate distance analysis resulted in 30% to 35% misclassification between firms, and none of the variables could individually discriminate between the firms. However, when all the multiple characteristics of the firms are considered together , we find that the distance between the firms are significant. This apparent inconsistency between the results of the univariate analysis and multivariate analysis is not an uncommon occurence; it arises from the fact that inclusion or exclusion of the variables in and from the analysis always changes the distance between groups. A comparison of the results of table (a) and (b) with those of (c), (d) and (e) would make the point clear. It is clear that exclusion of variables X1, X2 and X6, that contributed very little additional distance, have resulted in statistically significant values of D_M^2 . Emphatically it can be said that combinations of profitability , growth, leverage and valuation ratios have been successfully able to discriminate between the two groups. These results are in a high degree of consonance with the results of the tests applied in chapter three. Further, the combination of X2 and X3 , i.e., profitability and growth , as contemplated , have discriminated the firms of the Textile industry and Chemical industry at 1% level for the five year period. Noticably, the largest extent of discrimination was achieved in the case of Textile industry. Out of the 10 cases examined for this industry, 9 results were found to be significant at least at 10% level.

5.5 *Discriminant functions and the probability of misclassification*

The co-efficients of computed discriminant functions along with the figures for the probability of misclassification entailed by the use of these functions in discriminating between the groups of firms, provide further information helpful for improved decision making.

(a) Discriminant Co-efficients:

Linear discriminamt functions were calculated for each set of data for which distance statistics were reported in section 5.4. The co-efficients of computed linear discriminant functions give an indication of the relative discriminating powers of the individual variables in a multivariate context. As an illustration, coresponding to part (a) of table 5.4 , the linear discriminant functions for the six sets of data in the three industries are given in tables 5.5 (a) and (b). This table gives the vector of the discriminant scores of the function:-

$$Z_{ig} = W_1 X_{ig1} + W_2 X_{ig2} + \ldots\ldots\ldots\ldots W_p X_{igp}$$

Corresponding to each W , table 5.5 gives also the corresponding scaled vector W_s which has been obtained from W by multiplying each element of the latter by the square root of the corresponding diagonal element of the pooled matrix.[3] This procedure standarises the discriminant co-efficients and the elements of W_s thus reflect the relative contribution to the discriminant made by each variable.

Table 5.5

Discriminant Co-efficient (W) and scaled discriminant co-efficient (

(i) 5 year period

Variables	Textiles		Engineering		Chemicals	
	W	W_s	W	W_s	W	W_s
X1	0.12	5.22	0.05	5.61	0.33	7.78
X2	0.06	4.81	-0.02	-3.20	0.01	0.93
X3	0.67	87.11	0.37	18.91	-0.20	-12.72
X4	0.71	83.22	-0.33	-22.53	0.31	16.71
X5	0.29	11.62	0.15	9.22	0.25	12.11
X6	0.11	13.77	-0.20	-11.77	-0.04	-1.20
X7	0.51	62.44	0.39	25.33	0.71	47.20
X8	-0.34	-31.22	0.08	6.32	0.03	1.19
X9	0.86	134.20	0.42	37.30	0.79	43.70

(ii) 3 year period

Variables	Textiles		Engineering		Chemicals	
	W	W_s	W	W_s	W	W_s
X1	0.04	2.74	0.13	2.11	0.02	1.15
X2	0.11	6.73	0.07	1.03	0.01	2.30
X3	0.60	62.20	0.20	6.01	0.77	57.30
X4	0.72	73.01	-0.02	-0.79	0.43	21.20
X5	0.41	47.51	-0.18	-3.67	-0.04	-3.80
X6	-0.01	-1.61	-0.27	-6.77	-0.06	-4.60
X7	0.30	21.33	0.49	27.80	0.72	55.10
X8	0.31	29.34	0.31	33.60	-0.06	-11.20
X9	0.84	94.40	0.22	31.50	0.64	59.90

The following important points emerge from the information contained in table 5.5

(i) The relative discriminatory powers of the variables in a multivariate context are often quite different from those observed on a univariate basis. In spite of these, variables X3 and X4 (relating to growth) , X7 (leverage) and X9 (valuation ratio) emerged as the most important discriminators. Profitability were in no case able to act as a good discriminator as it was in the case of multivariate analysis.

(ii) The computed vectors W and W_s for the various sets of data show the relative discriminatory powers of the variables differ considerably between industries and time periods. However , for almost all the industries X3, X4, and X9 were found to be the best discriminators.

5.5 (b) Probability of Misclassification

Tables 5.4 (a) to (e) showed that out of 30 sets of data, there are 15 sets of data for which D^2_M is significantly different from 0 at 1% to 10% levels. These means that for these sets of data there are real differences between the F.I.O firms and O.O firms and the computed discriminant functions best discriminate between them. The question, however, still remains: how good are the discriminant functions, i.e., what is the extent of discrimination achieved by them.

A simple way of answering this question is to obtain the theoretical probability of misclassification from the table given in section 3.6, which relates distance to the probability of misclassification. However, the accuracy of this answer depends among other things on the following conditions: (i) that there is

no sampling error of D_M^2 and (ii) that the data possesses multivariate normal distribution and the identical dispersion matrices in both groups. Nevertheless, it is to be pointed out that the computed values of D_M^2 in tables 5.4 (a) to (e) , even when they are significantly different from zero, are not very large to reject all probabilities of misclassification. Thus, there is the necessity to compute the extent of misclassification by avoiding these assumptions.

A second and more direct way of solving the problem of misclassification is to compute the empirical probabilities of misclassification with the help of the computed discriminant functions. In our analysis we have adopted this method. The procedure adopted was as follows : In each of the set of data for which D_M^2 was found to be significant at 1% to 10% level the firms were classified into F.I.O and O.O. firms on the basis of their discriminant scores(Z values) . These values were calculated for each firm by using the relevant discriminant function. The decision rule (mean value of each variable for the relevant group) for allocating firms to the two groups was intended to minimise the probability of misclassification. The results of these calculations for the three industries for 5 and3 year periods are given below. The linear discriminant function was based on (i) 9 variables (ii) 7 variables, (iii) 5 variables (iv) 4 variables and (v) 2 variables.

Table 5.5 (b)

Probability of Misclassification of Firms (3 industries together)

(i) 9 variable function

	5 year			3 year		
	Total	Correct	Incorrect	Total	Correct	Incorrect
F.I.O firms	43	28	15	43	30	13
O.O.firms	28	19	9	28	18	10
Total	71	47	24	71	48	23
% of Misclassification.		33.8%			32.4%	

(i) 7 variable function

	5 year			3 year		
	Total	Correct	Incorrect	Total	Correct	Incorrect
F.I.O firms	43	33	10	43	33	10
O.O.firms	28	23	5	28	20	8
Total	71	50	15	71	53	18
% of Misclassification.		21.1%			25.4%	

(i) 5 variable function

	5 year			3 year		
	Total	Correct	Incorrect	Total	Correct	Incorrect
F.I.O firms	43	34	9	43	33	10
O.O.firms	28	22	6	28	24	4
Total	71	51	15	71	57	14
% of Misclassification.		21.1%			19.7%	

(i) 4 variable function

	5 year			3 year		
	Total	Correct	Incorrect	Total	Correct	Incorrect
F.I.O firms	43	35	8	43	35	8
O.O.firms	28	23	5	28	22	6
Total	71	58	13	71	57	14
% of Misclassification.		18.30%			19.7%	

(i) 2 variable function

	5 year			3 year		
	Total	Correct	Incorrect	Total	Correct	Incorrect
F.I.O firms	43	34	9	43	33	14
O.O.firms	28	20	8	43	23	5
Total	71	54	17	71	56	15
% of Misclassification.		23.3%			21.1%	

The results above amply demonstrate that 18% to 34% of the firms were misclassified in general for the short and long run periods.Further, there is a tendency for the probability of misclassification to decrease with the reduction in the number of variables. Though , it is not the number of variables , but the relationship between the variableswhich matters much, yet the minimum degree of misclassification is noticed in the three variable case. Although this information represents a definite improvement over the error of misclassification expected on random classification (50%), it indicates some degree of overlap betweenm the characteristics of F.I.O. and O.O firms. Possibilities of

misclassification are also low in case of functions where 7 and 5 variables are included. The fact there are low possibilities of misclassification also flows out from the information in the 2 variable case.

Thus , it is felt that the results of the Multiple Discriminant Analysis have considerably helped us in corroborating the fact that differences do actually exist in the financial behaviour of the two groups of firms.

5.6 *Conclusions.*

To sum up the contents and findings of this chapter the following points are listed down :-

(i) The objective of statistical analysis conducted in the present chapter was to confirm or ratify the findings of the earlier chapters.

(ii) The results generally show that it is possible to discriminate between institution owned firms and the others on the basis of some variables.

(iii) Analysis of the results of this section shows that discrimination between the two groups firms is possible , but, no explicit conclusion can be drawn as to whether F.I.O. firms perform better or worse than the O.O.firms. However results of the preceeding chapters show that F.I.O. firms have inferior records for some variables ; generally these variables are found to be the best discriminators between the two groups of firms. Thus from this angle it can be stated that performance of the O.O. firms are better than the other group.

(iv) Lastly, a general conclusion , that the institution owned firms are relatively inefficient can be drawn based on the findings

of the total empirical study. Though the findings of the study do not fully confirm managerial theories of firms , in the Indian context, yet results of some of the variables show that the phenomenon of managerial exploitation of owners cannot be totally ruled out.

NOTES (CHAPTER FIVE)

1. This basic discussion has been made by Ajit Singh in his book " Take overs - Their Relevance to the Stock Market and the theory of the Firm. "; Cambridge (1971) . Readers who are interested in details may refer to the article by W.G.Cochran (1964); " On the performance of the linear discriminant function"; Bulletin of the International Statistics Institute, Book 2, reprinted in Technometrics - May 1964.

2. For details of the relationship between Fisher's , Hotelling's and Mahalnobis' Multiple Discriminant Analysis models refer to:- R.H.Lindeman , P.F.Merenda and R.Z. Gold - "Introduction to Bivariate and Multivariate Analysis. (pp 171-183).; Scott, Foresman and Company , London, 1980.

3. The pooled matrix 'S' is given by $S = S^1 + S^2$ where a typical element S^1_{pq} in S^1 is defined as

$$S^1_{pq} = \sum_{i=1}^{N_1} (X_{i1p} - \bar{X}_{1p})(X_{i1q} - \bar{X}_{1q}) \quad .....(p=1...k,\ q=1....k)$$

and similarly the typical element S^2_{pq} in S^2 is defined as

$$S^2_{pq} = \sum_{i=1}^{N_2} (X_{i2p} - \bar{X}_{2p})(X_{i2q} - \bar{X}_{2q}) \quad .....(p=1...k,\ q=1....k)$$

REFERENCES (CHAPTER FIVE)

1. *Fisher, R.A.*, " Statistical Methods for Research Workers (12 ed.), Oliver and Boyd 1954.

2. *Hotelling.H.*, " The generalisation of Student's ratio" Annals of Mathematical Statistics,2, 1931.

3. *Mahalnobis.P.C.* "On the generalised distance in statistics" Proceedings of the National Institute of Science, India,12 ,1936

CHAPTER SIX

CONCLUSIONS AND POLICY IMPLICATIONS

6.1 *The Treatise in Retrospect.*

The overwhelming importance of an efficient financial system for the development of any economy formed the basis of our entry into the study. Deliberations on the characteristics of financial system highlighted the fact that by definition, efficient use of resources for economic development are ensured by a potent financial system. In this context, while tracing the impact of Indian financial system on its economy, three basic trends were identified, (i) increasing reliance of corporations on funds of financial institutions and internal savings (ii) low dependence on stock market funds and lastly (iii) rise in equity holding of private corporate sector firms by government controlled financial institutions.

In fact gradual rise in institutional investment along with their growing importance in the corporate power structure, inspired us to review the question of role of financial institutions in the private corporate sector. Our objective was to develop a set of guidelines for institutions that would enable them to inculcate element of efficiency in private corporate sector.

The task, as was felt, was arduous, specially in the context of piebald characteristics of the philosophy of mixed economy followed in India. It was prudently comprehended, that, any dictum, if not based on robust objective criteria would unnecessarily drag us into an ideological debate. Thus, the criteria of efficiency was treated as a basic foundation of our study to examine

on an objective basis, the role of institutions in the private corporate sector, both as an investor and development agency. Specifically, the study was posed to delve into the fact whether corporate efficiency in any way was related with insitutional equity holding?Alternatively, the study was an attempt to measure efficiency consequeces of rise in institutional holding in the private corporate sector. Based on the findings of the empirical analysis an attempt was made to solve the basic policy issue of the present study. Thus discussions on the relevance of the present study was the subject matter of first chapter.

For the purpose of empirical analysis, a total number of hundred firms were sampled from a cross-section of industries. These firms had varying degrees of institutional equity ownership. To facilitate comparative analysis, total sample firms were divided into two groups following the provisions of Securities Exchange (Regulation) Act. These two groups of firms were identified as "Institution owned" firms and "others". After a careful scrutiny of various theories of the firm nine financial ratios were selected to discriminate betwen these two groups of firms. Time period of the study was 1981 to 1985 with a subperiod of 1981-83. Second chapter mainly dealt with these methodological issues.

Various non-parametric and parametric univariate tests were used to find out the differences in performance between *financial institution owned and others owned firms.* These tests, in general, revealed that F.I.O. firms were outperformed by O.O. firms in many cases. Specially, statistically significant differences were found in case of variables like profitability, growth, leverage and valuation ratio. Thus, the third chapter, where we

initiated empirical analysis, provided us the first impression that the firms with higher institutional holding were performing relatively inefficiently.

The following chapter, in a multivariate context, disclosed through correlation and regression analysis, that negative relationship existed between institutional holding and performance variables in general, with the exception of debt equity ratio which had significant positive relationships. This corroborated the findings of the third chapter that rise in institutional holding led to corporate inefficiency and risk.

Finally, the last stage of statistical inquiry based on 'Multiple Discriminant Analysis' also revealed the fact that the two groups of firms could be distinguished on the basis of all the variables or combination of related variables. This finding also was in consonance with the findings of the earlier chapter.

Findings of the study have serious and far reaching implications. Funds of financial institutions are in all practical sense public money. When such money is misutilised, institutions cannot afford to be a mere spectator to the whole show. Empirical analysis shows the negative results of involvement of institutional fund on the efficiency of the firm. Underlying reasons of inefficiency are discussed in the next section.

6.2 Unbridled Management : Roots and Results

Development of modern corporations obviously helped to meet some of the pressing economic needs of the time, but unfortunately also brought with it the vice of managerial exploitation of owners. Growing dissatisfaction with the

functioning of the boards, both in developed and developing countries speaks eloquently about it. In India, contribution of unbridled management in the inefficient use of national resources is an issue in vogue[1]. Factors contributing to the development of the present situation are briefly discussed below:

(i) Capital market in India can not act as a 'guardian of efficiency' and proper 'allocator of scarce resources'. Under the circumstances of heavy dependence of corporations on 'internal financing' and reliance on 'funds from financial institutions', corporate managers have avenues open for avoidance of "stock market discipline".[2]

(ii) Individual shareowners are disorganised and widely dispersed and have very little, if any, influence on the corporate management. Though technically shareholders are expected to scrutinise the annual report of the directors and approve them by formal motion, in practice diffused shareholders often do not have the capability to match wits with those in power and adoption of the company's accounts by the shareholders at the annual general meeting is merely a formality and often a farce.

(iii) Corporations are managed, in most cases, by families or groups holding insignificant portion of equity shares. Financial institutions, infact, the real owner of the business prefer to remain as passive spectators to many corporate activities. In other words the phenomenon of divorce of corporate ownership from control is not uncommon. Such features of corporate control by families

lead to abuse of managerial position to create family empires with high speed and results in intense managerial exploitation of owners.

(iv) Audit, a tool to protect the interests of shareholders, has become a mere formality. Auditors considers the mangement and not the shareholders as their employers. "The blatant use of financial principles sanctified by professional opinion helps in formulation of accounts in a manner to suit the purpose of managers and keep the real owners in dark". (Thanjavur, 1987).

(v) Though the Companies Act has been amended several times to suitably streamline managerial and other activities, yet it has been, to a large extent, deficient in doing so. Rather, it is felt, that "management in collusion with the Government has resorted to violating the provisions of the Act most blatantly." (Thanjavur, 1987). Serious dubitation is often cast as to whether the harnesses on the processes of issue of prosepectus, financial disclosure, intercorporate investment, managerial remuneration etc. are at all adequate.

(vi) Absence of an assiduous corporate control market and fierce takeover battles like capitalist countries, often permits inefficient Indian managers to walk away even with the most inept feats. Inefficient management is rarely intimidated with possible takeover threats form their counterparts.

Thus, Indian management being quite free from "capital market constraints", "individual shareholders influence", "regulation of Companies Act", "threat of takeovers" and

functioning with tacit support of financial institutions and auditors, have opportunities to show indifferent attitude towards public money. This unbridled management produces results that can by no means be treated as satisfactory. Some of these results are :-

(a) Industrial sickness in India has virtually taken the shape of a rampant plauge. Today more than 16% of the listed companies have been declared as sick. As a result large volumes of funds have been blocked and virtually wasted. World Bank experts after going through the accounts of institutions reported that no less than 35% of the total portfolio of financial institutions are found to have been 'contaminated'.[3] Considering the aggregate assets of the financial institutions, estimated at Rs. 90,000 crores, the bad advances of the financial institutions would by any reckoning be a large amount. Mismanagement and diversion of funds are the main reasons contributing nearly 52 per cent of the total causes of sickness in large units.[4] Industry, banks, government and professional managers periodically participate in ritualistic exercises on revival of sick industry and prevention of sickness. The fact that companies get sick, but not their managers or directors have been brought to light on many occasions, but the Companies Act and legal codes governing the fiduciary responsibilities of directors have never been tested to bring to book corporate management guilty of misfeasance.

(b) Many companies do not pay dividends to the shareholders; the proportion of non-dividend paying companies is nearly 40% now. Even companies after declaring dividends fail to meet their

commitments for long periods of time.[5] This is in gross violation of the statutory obligations of the company directors, where they are required to distribute dividends within 42 days of its declaration. Thus company boards very often fail to discharge their duties towards suppliers of risk capital.

(c) Corporate anomalies have reached such an extent that debenture-holders are also deprived of their interest in may cases. This amounts not only violations of the Companies Act, but also discouraging the suppliers of debt capital.

(d) Companies tend to emphasise much on growth of assets rather than on increasing production. Indian corporate sector has one of the highest capital output ratios among developing countries. It has been hypothesised that "high incremental capital output ratios get liquidated by low productivity of investment". (Desai, 1981). This in many cases is reflected in the Indian corporate sector where scarce resources are wasted by inefficient functioning of managers. Thanjavur observed "even the chairman of a leading financial institution has lamented the tendency of big business to augment assets but not production. What is important is that there are greater personal returns in promotion and not in production".(Thanjavur, 1987)

(e) Lastly, it is to be alleged that corporate managers in the private sector may have lost sight of the eithics of a socialistic economy and a welfare state. Rather than observing the principles of "of the people, by the people and for the people", they have

cultivated practices to meet their own fanciful ends. The theory and practice of management has failed to resolutely address itself to the dilemma between the law of capital accumulation and imperatives of constitutional legitimacy. This has signalled the erosion of the constitutional estate of the democratic and sovereign republic of Indial.

Just a few points have been raised here only to bring to light the ineffectiveness of corporate managements in general. To substantiate the phenomenon several other examples may be cited. However inefficiency of the board system are not the unique feature of India alone. In industrially developed countries like U.S.A. and U.K. the functioning of the board is under severe criticism at present. It is often been felt that declining thrust and productivity in these two countries is to some extent traceable to mismanaged boards.[6]

In modern corporations, ineffieiency of board to an extent stems from separation of ownership from management, Corporations of both developed and developing countries suffer from this evil. However, there are some unique features of India as mentioned earlier that contributed much for the emergence of unbridled management responsible for inefficient use of resources. This situation is by no means comparable with the scenario of developed countries.

A possible remedy to these problems could be active participation in the corporate management by the financial institutions. This aspect was also highlighted in chapter one of this study where it was pointed out that financial institutions by virtue of their large shareholding could discipline existing

management and act as 'guardians of efficiency'. Such action on the part of the institutions can be supported on two basic grounds.

(i) For all practical purposes, institutions with their large equity holding can be treated as the real owner[7] of the corporate sector. In other words, government has become the real owner of the private sector corporations and the theoretical distinction between public and private sector has virtually disappeared. As the real owner, it has in principle the right to interfere into corporate matters to discipline erring management. The issue that we like to emphasise, institutions , who enjoy the privilage of selection and dismissal of managers.cannot be deprived from their right as owners.

(ii) Results of the empirical findings further reinforces the claim that owner of corporate sector must behave like an owner. When there is clear evidence, that greater the involvement of public money more is the inefficiency of the firm. Institution as custodians of public money cannot remain as spectators.

Mr. N.A. Palkivala, eminent jurist echoed our views when he stated "Public financial institutions had the same right as ordinary shareholders public financial institution must exercise its voting power in public interest and also inturest of shareholderes". Lately steps have been taken to ensure direct institutional participation in corporate management. During the last 15 years the nominee director system has been in operation in India. But the issue remains open, how far nominee director system was effective to actieve both corporate and national goal ?

6.3 *Nominee Directors - Expectations and Achivements*

(a) Definition

Before entering directly into critical evaluaion of role of the nominee directors a few introductory words regarding these type of directorships will be in order.

The Companies Act has not defined a nominee director. Specifically, a nominee director is one whose appointment on and removal from the board of directors of a company is the prerogative of the controlling authority - whether it is an individual body corporate or any person.

The Institutional nominee directors in India came into being with the establishment of the Industrial Finance Corporation of India in 1948, which under it's statute retains the right to appoint any number of directors on the boards of it's assisted concerns. Similar rights have also been given to some other institutions under their statues. However during the early years the institutions did not exercise their rights with great emphasis. It was only since 1971, that financial institutions started appointing nominee directors on a regular basis in pursuant to guidelines issued by the government.

(b) Appointment & Withdrawal

Financial institutions impose at the time of sanctioning a term loan or underwriting an issue, that it will have the right to nominate one or more nominees on the board of directors of the assisted units so long as the term loan or interest there on remains outstanding. The lending institution also has the right to remove any of it's nominees and appoint another in his place.

However the basic policy with regard to appointment of nominee directors is as under.

(i) Financial institutions shall appoint nominee diretor(s) on the Boards of all MRTP Companies.

(ii) In respect of non-MRTP companies, financial institutions shall appoint nominee directors on a selective basis, especially in cases where one or more of the following conditions are in vouge.

(a) The unit is facing some serious problem and is tending to become sick.

(b) The institutional shareholding is more than 26%

(c) The institutional stake by way of loans or other investments is Rs. 5 crores.

(iii) The exact number of nominee directors required to be appointed on the board of an assisted cocern would be decided by the institutions after mutual consultation with the concern.

While appointing the nominee directors the financial institution emphasise that the board shall be broad based to represent adequately the interest of various groups.[8]

Regarding the withdrawal procedure, nominees are normally with drawn after a period of 3 years. However a nominee director is generally not subject to retirement by rotation, though in certain cases the institutions may have it's nominee elected as a rotational director by mutual agreement with the assisted company.

From a critical perspective the appointment mode of the nominee by the institutions virtually appear to be quite rational and democratic. Just because they hold large chunks of share they do

not like to show 'big brotherly' attitude and impose on appointing of a large number of directors. The attitude of broad-basing the board possibly reflects to a large extent the democratic approach of institutions in corporate management. Again, appointment of nominees in cases where companies are sick or where their shareholding is more than 26% demonstrates the rationality of the institutions. The first shows the caretaken approach and the second moves in line with the Securities Exchange (Regulation) Act. Further to ensure that expert and qualified people are appointed on the board, there exists provisions of disclosure of particulars of the nominees.

The Government expects that the nominee directors thus appointed should discharge the following duties on behalf of their appointing authority.

(1) Ensuring payment of institutional dues and observance of the loan terms.

(2) Ensuring payment of government dues, including excise and custom dues and other statutory dues.

(3) Ensuring that there is no siphoning of funds and abuse of power by the promoters.

(4) Improving productive efficiency and maintaining dynamism.

(5) Controlling expenditure being incurred by the company or management group.

(6) Looking after financial performance of the company.

Thus, it is expected that the nominee directors would safeguard the interest of government, ensure efficiency of assisted companies and control financial misdeeds of the management group.

In this section, we have simply stated the procedure of appointment and responsibilities of nominee directors. In fact, it is more important to concentrate on the basic policy of public financial institutions towards corporate management which will ultimately decide the nature of relationship between owner and management of the firm.

(C) Changing Outlook of Institutions

Depending on their experiences, public financial institutions on several occassions changed their outlook towards corporate sector. Initially, they lured a policy that by any standard could be deseribed as sufficiently liberal if not fully indifferent. Their tremendous importance in the corporate power structure was neither used to determine characteristics of boards nor to control management of the corporations. They avoided showing "big brotherly" attitude and seldom insisted on inclusion of large number of institutional representatives on the board. On the contrary, institutions were in favour of "broad basing the board"[8] and inspired inclusion of "expert and qualified" persons in the board. Institutions persuaded nominees to act as "friend, philosopher and guide" of the management of assisted companies. Nominees were expected to follow the policy of non-interference in the corporate management and help for the development of a "management team" capable to look after the interest of all concernd. "Skills and specialised knowledge" of institutional representiatives were considered as the dominant reason for their inclusion in the boards.

Thus, very often necessity of inclusion of nominee

directors on the board was justified in the following way- "necessity and desirability of independent outsiders in the board stems primarily from the fact that in todays complex business environment where each organisation is a part of the total system and has to respond to the total environment ; sharing of knowledge and skills with outsiders who do not have vested interest, would be of immense benefit for achieving the corporate busines principles [Bhattacharya 1989].

By definition, thus nominee directors are simply outsiders, not the representatives of real owner of the business. They are merely responsible for imparting their "skills and knowledge" assential for the achievement of corporate objectives. In a true sense, when real owners relinquish their right to "control business either directly or indirectly, it results in separation of ownership from management. Unlike industrially developed countries, passive attitude of the dominant shareholder of the Indian corporate sector was conducive for the divorce of ownership from management. Obviously, it allowed management largely to function free from government control and helped to preserve separate indentity of private corporate sector. In this process, undoubtedly it keeped to preserve the very essence of mixed economy.

However, Indian management was not responsive enough to the liberal attitude of financial institutions. All the vices of separation of ownership from management such as "extravagance, lavish expenditure, diversion of funds" (Gupta 1988), abuse of power resulting in inefficiency of the firm were prevalent in Indian industries.

There was a strong feeling that the whole purpose of setting up public financial institutions were going to be defeated by the present role of the government in the corporate sector. Such instiututions were established with the hope that hence forth "all big business would be borrower from government and government would able to discipline them" (Thanjavur, 1987). This would also provide the government an unique chance to integrate the activities of corporate sector to achieve broader socio-economic goals of the country. Thanks to the non interfering attitude of the institutions, all these hopes were belied and institutions were forced to persue a stiffer attitude towards corporate sector. Very distinctly emphasis was shifted from "advisory" to "watch dog" and "control" functions.

Guidelines issued by the Industrial Development Bank of India emphasized the role of nominee directors as "gurdians of public policy". For a clear understanding of th present attitude of financial institutions we quote a part of the above guidelines. "The nominee directors on the boards of assisted companies are not only to safeguard the interests of the institutions but also to serve the interests of sound public policy. Since the interests of the financial institutions, shareholders and of the company basically converge, interest of institutions will be well served only when the project is implemented within the estimeted cost and time schedule and is run on sound commercial principles and within the policy framework of the government" (IDBI guidelines 1986). This definition specifically asserts that as trustees of public money, nominee directors should look after the commercial viability of the projects. This is essentially a 'watch dog' function and

suits perfectly with the theoretical concept of institution as "gurdian of efficiency". Since the characteristics of financial institutions are conceptualised as 'developmental agencies', it is natural to expect much more from the nominee directors.

Incidentally the government had also emphasized the boards "watch dog" and 'control' functions in view of growing industrial sickness even among large corporations "due to managements ineptitude and larceny with boards as helpless spectators".[Gupta 1988] The emphasis on such functions can more vividly be understood if government guidelines are carefully observed. "The nominee directors should ensure that the tendencies of the company towards extravagance, lavish expenditure and diversion of funds are curbed. With a view to achieve this objective, the institutions should seek constitution of a small audit committee of the board of directors for the purpose of periodical assessment of expenditure incurred by the assisted company, in all the cases where the paid up capital of the company is Rs. 5 crores or more. The institutional nominee directors will invariably be a member of these audit sub-committees" [As quoted in article of Gupta ,1988]. It seems government has a clear understanding of the problems arising out of separation of ownership from management in Indian industries and therfore appears to curb managerial exploitation of owners. In other words, to Government has conceived the idea of introducing sentinels on the board to act as vigilant "watch dogs".

In view of the findings of the present study, it is difficult to refute the relevance of "watch dog" functions of the nominee even if it contradicts the basic philosophy of mixed

economy. In addition, representation of Federation of Indian Chamber of Commerce and Industries to Narasimham Committee,[9] emphasizing the need for maintaining sanctity of private corporate sector in the mixed economy looses its significance inview of our empirical findings. Thus the scope of disputing the recommendation of Narasimham committee that favoured alert attitude of institution toward corporate sector is minimum.

There is many a slip betwen the cup and the lip. In the present context, one cannot afford to forget that the development of a policy and implementation of the same in practice does not necessarily mean the same thing. So there is scope of study to what extent this changed policy has been implemented in practice. Our experience shows very often we formulated high sounding guidelines that were never executed in reality.

(D) Expectations and Achievements:- Need to Bridge the gap.

The study of L.C. Gupta confirms our belief about the possibility of existence of a gap between expectations and achievements. The study observes that most of the nominee directors prefer the role of "friend, philosopher and guide" instead of "watch dog" and "control" functions.[10] The attitude of nominee directors can be simply explained in the way that, it is both naive and safe to play the role of advisor "instead of" guardian", so it is better to follow the soothing way. A "gaurdian" in all essence and principle, is expected to play the dual roles of "advisor" and "watch dog". However this attitude of nominee directors would have often made things unpalatable for corporate managers and they would never converge with the idea of boards

emphasizing on control function, simultaneously with "advisory" functions. Execution of advisory functions only can not under any circumstances be said to be violations of guidelines, however it may be ascribed as a case of circumvention of the main role i.e. "watch dog" function.

It seems proper to mention here that, on the basis of a few stray examples, there are some feeble attempts to show that the nominee directors, merely as an advisor to the board, played significant role in the development of a new pattern of management in Indian industries.To quote an author , "There is no denying the fact that the association of institutions in the management of corporate bodies has considerably facilitaled the process of progressive professionalisation of corporate managements. Institutions have been able to convince the corporate management to appropriately re-orient their organisational structure, personnel policies and planning and control systems. The shareholders of National Rayon Corporation, Kamani Engineering, Sylvania Laxman, EID Parry- to mention a few, recall with gratitude the constructive role played by the financial institutions in safegaurding their investments. While some of these companies had been incurring heavy losses due to inefficient, weak or divided managements, some others had been reportedly bled white by unscrupulous elements. In some other controversial cases like Baroda Rayon or Dharamsi Morarjee, the financial institutions had maintained a more or less neutral role". [Mukhi, 1990].

The proponents of this view select some special cases to prove that nominee directors simply as an advisor also can

convince the management to appropriately reorient organisational structure, personnel policies, planning and control system of the organisation in a way that may produce encouraging results. We refute this argument mainly for two reasons. First, proponents of this argument, very unfortunately, manage to forget a large number of cases where the "advisors" were not even consulted while taking some major policy decisions.

Certain specific examples may be cited to show how controlling group even after issue of different guidelines simply ignored institutional representatives while taking major policy decisions. Escorts where institutional equity holding is roughly 53%, issued shares and debentures of Rs. 15 crore without consulting even the institution before hand. Premier Automobile raised car prices without consulting company's board of which K.B. Punja, Chairman, I.D.B.I. was the nominee director. Most interesting example is Shaw Wallace where there were at all no institutional representatives in the board till 1985 despite 32 per cent collective equity holding of L.I.C. and U.T.I. As a matter of fact, the controlling interest of public financial institutions is generally used merely to takeover of 'sick' units or marginal units saddled with large losses.

Our feeling is there might be a few cases where institutions had been able to discipline management but probably in most of the cases nominees decorated their seats as silent observers. Secondly, findings to the empirical study sufficiently corraborate our above observations. We have found that the performance of F.I.O. firms are lagging behind the others. If the nominees had really been vigilant the resuts would have been

better.

What motivates nominees to act as an "advisor" instead of "watch dog" ? What steps should be taken to turn "passive" nominees into "active" and "vigilant" ones. Thanjavur was partially succeessful to answer first question. The author felt that management aught to be disciplined but nominee failed to do that as the "cultural heritage of professional managers in these institutions" being idential with corporate manager, little could be achieved from them. Vested interests, lack of proper acumen to go deep in to problems, inadequate provisions of Companies Act, questionable audit standards, lack of clear understanding about their roles are also some other reasons leading towards indifferent attitude of nominees in the assisted companies. Instead of stretching further the first question, in the next section, we propose to explain what is to be done to make nominees more vigilant and active. Obviously guidelines have been developed in the background of "watch dog" functions of nominees that are only capable to discipline existing management and ensure implementation of public policy in the present situation.

6.4 *Suggestive Measures.*

At the outset, we prefer to mention some relevant points pertaining to the discussions of the present section .

We suggest two sets of actions:- corrective and punitive. While corrective action denotes remedial measures, punitive action implies removal of existing management. The question of punitive action comes, only when , corrective action fails. Without active participation of real owners in the

management of the corporation, none of these actions can be taken.

All the sugesstions do not necessarily directly implicate institutions. A more or less comprehensive set of sugesstions involving institutions, auditors, Companies Act etc., have been designed. These are expected to facilitate corrective action against management. However, broadly speaking these sugesstions relate to Nominee Directors and amendments of the provisions of the Companies Act. The former is actually dependent on the latter because the the legislations are expected to serve as the broad framework within which the directors are to function.

Finally, the scope of implementing many a sugesstions will depend upon the relevance of institutions in the corporate power structure. With an average equity holding of 26% , it can reasonably be expected that a large number of companies will come under the ambit of institutional corrective and punitive measures.With these few words, we mention below some corrrective steps.

Corrective Actions:-

(A) <u>On Nominees and Boards</u>:

The primary weakness of corporate boards in India stems from their dummy characters. This characteristic is a result of Board appointment being mainly monitored by the controlling group of the company. Boards thus constituted, act as watchdogs of the interests of the controlling group instead of looking after the interest of shareholders at large. Institutions, being the real owner of many enterprises, should urgently take steps to transform boards from "rubber stamp" bodies to very vigilant bodies.

Anomalies of separation of ownership from control and the vices of managerial exploitation of owners can only be avoided if institutions play the lead role in formulating the policies regarding composition of boards, selection of personnel etc.

All the decisions of the institutions towards corporate boards should be guided by the philosophy ,that first step for ensuring corporate efficiency is that an excellent board should be formed. The primary attribute of an excellent board is that it should have on it all the proficiency, competence, adaptability and ingenuity relevant to its work in the context of the companies business. A board's performance is maximised "if it is heterogeneous. For, it has been observed that groups comprising people of markedly different styles and backgrounds produce better solutions and ideas than a homogeneous group." (Mills 1985). Institutions responsible for developing a vigilant board with all the above attributes are urgently required to initiate some actions. The steps relate not only to the selection of their own representatives, but also the other members. Keeping these in mind the institutions should take the following steps:-

* They should select nominees in a manner so as to represent people from different fields of specialisation.

* In addition to the academic and professional qualifications and service experience, the personal attributes of the nominee, such as their aptitude for work, honesty, integrity and personality should be judged in the context of their potential contribution to the board process. It should be ensured that the nominees have the qualities to make their presence felt on the board , rather than

act as" yes men" to the controlling group.

* Institutions must ensure that automatic inclusion of the younger members of the controlling groups and families are stopped. Their inclusion, if necessary, must be subject to a strict review of their attributes and competence.

* Institutions must ensure that the directors appointed under the principle of broad basing the board, should pledge allegiance to the general investors instead of the controlling group of the company.

* Before inducting a nominee director on the board the nominating financial institution should brief him about the state of affairs of the company, i.e., supply him with all information about the activities of the company, name of the directors, latest balance sheet, pattern of shareholding by different parties etc.

* Institutions should establish an information and feed-back system so that the nominees are regularly briefed about the important terms and conditions of financial assistance, changes in them and whether the company is complying with them.

* Institutions must then ensure that the directors after getting adequately trained and oriented attend board meetings regularly. In strict legal sense, there is no binding upon the directors to attend every board meeting; but Institutions should drive home the fact to the nominees, that, according to Section 283(1)(g) of the Companies Act, the office of a director shall be vacated if a director absents himself without leave of absence from three consecutive board meetings or all meetings of the board held within three months- whichever is longer. The nominees should be asked to pay,strict attention to this clause , and be careful so

that the directors of the controlling group cannot use this "legal guillotene" on their necks.

* The nominee directors must ensure that all relevant issues influencing corporate performance and policies are discussed on the board meetings. They should be aware of the fact that "board meetings can become excellent grounds for playing hide and seek games under such conditions where the functional directors representing the entrepreneurs are a determined lot not to give a correct/ clear position to the board about the company's performance, problems, strengths and weaknesses." [Ramakrishnan 1980]. Thus, nominees must be on gaurd to remove these practices.

* Institutions should ask the assisted companies to despatch to them and the nominees, copies of all agenda papers at least 10 days in advance of the board meetings. They should oppose the practice of the company presenting supplementary items on important matters on the day of the meeting.

* Number of directorships that a person can hold at a time must be limited , so that the he can devote sufficient time and effort for each company's meeting. Directors "should be prepared to commit the time needed for the board's work, i.e., doing the homework required for board meetings, attending meetings regularly, being available to serve on board committees, and doing such other work as may be assigned to them by the Chairman of the board." (Gupta 1986).

(B) On Priorities of Functions:

Nominee directors can function more efficiently if the priority of their functions are well defined. Government guidelines

have listed down a long series of duties, with out specifying which ones should be attended with greater care. Thus it is suggested that:-

* Functions like monitoring of timely payment of institutional loans, government dues and taxes by corporations etc,.should in no case be the prime function of the nominees. These should left to the appropriate bodies like , "Recovery Cells of Institutions" ,"Central Board of Direct Taxes" etc.

* Top priority should be given to the 'watch dog' functions of the nominees. Since many proprietory types of malpractices such as extravagant management perqusites, lavish bungalows, foreign cars, vast amount of entertainment allowances, etc., fall outside the ambit of audit, the nominees as 'keepers of corporate conscience' should check these avenues of 'managerial exploitation of owners'.

* In the context of growing industrial sickness, in order of priority, the next duty of the nominees should be to closely monitor the progress of the assisted units. They should flash back in time, the first signals of corporate sickness so that appropriate steps can be taken before it is too late.

(C) <u>On Corporate Accounting And Audit Systems</u>:

Presently in many cases, the system of accounting and audit, instead of catering to the shareholders, have become an effective tool of the management to suit their own desires. These systems should be modified, so that the extra pecuniary goals of the managers at the cost of the loss of the real owners are minimised. In fact accounting has become an art either to camouflage the misdeeds of management or to project a particular

type of image best suited for management.

Because of the vast domain of accounting and audit it would not be possible to elaborately suggest remedies in all specific clauses; however, some sugesstions are made as examples.

* If the net worth of the company is inflated by revaluation of assets, the additional depreciation on the inflated value of the assets should be debited to the profit and loss account. Otherwise, the shareholders will be presented with a distorted picture of the state of affairs.

* Minimum disclosure requirements should be modified for import of capital goods, purchase of components from foreign principals or family organisations etc, At present these type of transactions do not come under the perview of the minimum disclosure requirements of the Companies Act and provides an excellent opportunity to further the economic goal of managers in exclusion of the owners.

* The practice of treating depreciation as a residuary entry, i.e., writing back, writing down, conversion from one rate to another should be strictly restricted. These are only practiced to satisfy managerial needs.

* Audit standards and practices should be suitably modified so that the professional auditors legally and ethically bother about the security of funds of the investing public.

* Steps should be taken so that the nominee directors enjoy the right of free access to a company,s records, accounts and personnel to discharge their responsibilities. Institutions on behalf of general shareholders may also think in terms of sueing the auditors guilty of misconduct for damages which is a common place practice in developed countries.

* Auditors should be asked to ensure that true and fair view of the company should actually be presented to the shareholders. Auditors should be debarred from presenting lengthy reports with a lot of technical jargon in it; this action should be taken only when auditors attempt to satisfy their conscience or escape possible proceedings for professional misconduct. Reports for the shareholders should be easily comprehensible and streamlined.

* Nominee Directors should be instrumental in ensuring that the boaed gives attention to the auditor,s objections , comments and suggestions.

* If Nominee Directors have any doubt regarding the standard of audit conducted by the statutory auditor, they must have the right of formation of the board's audit committee and in which the nominee director will be represented.

* To restore confidence to the shareholders, institutions on behalf of the investors may arrange for some form of supervisory audit by a committee shareholders who are not members of the board.

(D) On Shareholders Participation in Annual General Meetings:

One of the basic characteristics of modern corporations " with stock widely scattered among individuals, investment trusts or institutional investors, who faithfully vote for incumbenty managements and resolutely refuse to participate in its concern" results in "stockholders obeying the management and not the management the stockholders." (Rostow 1959). To check this situation it is necessary that;

* Shareholders should be vigilant and participate in corporate

proceedings. They should not leave the task of vigilance only to the nominees, but should co-operate with them in doing so.

* Well informed shareholders who have the habit of selling the stocks of "not so profitable" companies, should shun the habit of doing so and should engage himself in the debates for remedying managerial shortcomings. Responsibilities for creating such outlooks do not fall within the ambit of the Companies Act or functions of the nominees. Rather it is the task of the Government and the public media to create such awareness.

* To promote interest of the general investors in the corporate activities, Shareholders' Associations should be formed and legally recognised. Management should be directed by law to submit reports to such associations at regular intervals. The Articles of Association of companies can be used to compell the shareholders to participate in corporate proccedings and in the AGMs. It is suggested, " For failure of complying with the obligations of a member, the membership rights and status may be lost if so provided in the articles." (Sen 1971).

* Shareholders associations should be permitted to effectively participate in the AGMs in a representative capacity with a right to speak and vote on behalf of all its members.

* Institutional representatives, who happen to be the best equipped personnel, can act as consultants to the Shareholders' Association and also can also lead the association in its infancy.

(E) On Intercorporate Investments:

When inter corporate investment, are made out of proper surpluses with a view to diversify, keeping in mind the

interest of shareholders, no eyebrows can be raised. However, when these investment are made with other fanciful purposes, institutions should keep a vigil on the following aspects:-

* when institutions are convinced that the purpose of intercorporate investment is to expand family empires, with disregard to the ethics of 'socialistic pattern of society', they should stop the practice by vehement opposition in the board

* Careful assessment of financial viability of proposals of siphoning of funds should be undertaken, so that the investing organisation does not turn sick. It is known that one of the major reasons for corporate sickness is uncontrolled siphoning of funds. Nominee directors should be given ample opportunity to have free access to company's records, accounts, documents etc., so as to help them to take judicious decisions in this respect.

* If the nominee directors have any doubt regarding desirability or otherwise of the investment, in these cases also, they may insist on forming an audit sub-committee from which the chief executive will be excluded. Audit committee should conduct the audit absolutely free from any influence of the company's chief executive.

* Provisions of section 372 of the Companies Act should be enforced and properly administered so that the interests of the shareholders are protected.

* Amendment of Companies Act is necesary to permit shareholders, not the board of directors, to decide upon their representatives in the company where the investment is made. So long board is not properly constituted as mentioned earlier, it will provide some leverage to the financial institutions so far

selection of company representative are concerned. It would obviously discourage existing management from making uneconomic intercorporate investment.

(F) On functioning of the Company Law Board :

The Company Law Board can be instrumental to gaurd against the management and auditor who fail to discharge their duties properly.

The Company Law Board ;

* should be given the right to order investigation into any affair of the corporation.

* should implore auditors to go deep into transactions that 'have a foul smell' and disclose managerial expenses supported by dubious vouchers.

* should direct the removal of auditors who fail to discharge their duties, and debarr them from practice notwithstanding anything contained in the Chartered Accountants Act.

* should keep a liason with the tax authorities, so that the shareholders are informed about legal disallowance of any expenditure incurred by the company.

(G) **Punitive Actions:-**

Let us take a pause at this juncture to have a fresh look at the industrial economic scenario of our country which is flooded with fierce take-over battles at present.[11] In an otherwise, cosy and sedentary business environment, takeover appears as a storm causing a sense of insecurity among Indian

management. Take-over with all its drawbacks is essentially an effective device, widely used in the capitalist countries to improve efficiency of the firm.[12] Constant increase in efficiency is the only means available to existing management to retain control over company amidst take over battles. In this sense, take-over may be considered as a punitive action against existing management who fails to utilise resources efficiently entrusted to them.

A take-over bid in India has different implications than any where else because of the large equity holding of financial institutions. Depending on their attitude towards existing management, they can frustrate of induce take-over attempts. Who will be in driver's seat of any corporation, now largely depends upon the attitude of institution.

Role of institutions defined earlier may be described as "corrective" steps of institutions to streamline the activities of inefficient management. Change of management through direct or indirect support in take-over may be considered as a "punitive" tool available to the institution for replacement of existing management who failed to respond properly against the corrective measure of institutions. We hope this will provide a constant threat on existing management and ensure better utilisation of public money. Narasimham Committee also endorsed identical views,- "An essential aspect of compitition in a modern industrial economy is managerial competition, which implies, among other things, take overs and mergers. The operation of the over-all mechanism governing take-overs and mergers and the discharge by the financial institutions of their functions in this regard, should

be guided primarily by objectives of efficiency". [Narasimham Committee Report]

Before concluding our study, we seek to provide clarification on some essential points to avoid confusion . They are as follows:-

(1) The guidelines have been developed to suit the basic economic philosophy of a mixed economy. It requires a proper blending of managerial autonomy of promoters and watch dog functions of nominees, which seems to be a difficult task.

(2) Some times it becomes difficult to make any finer distinction between "high handed' attitude and "watch dog" functions. While "watch dog" function is welcome, "high handed" attitude is to be avoided. Detailed guidelines will minimize the scope of using discretionary power, thereby high handed attitude of management.

(3) No claim is made that the aforesaid guidelines are exhaustive. In fact, no such fool proof guidelines are possible to prepare. Depending on the situation nominees have to use their skill and intelligence to discharge their duties.

(4) Revision of companies Act, attitude of auditors and shareholders are necessary conditions for successful functioning of nominee directors. Thus, an all out change in the outlook of all concerned are essential to promote efficiency of the corporations.

(5) Lastly, favourable response of the Government is absolutely essential for implementation of the true spirit of the guidelines.

We end with a high hope that these corrective measures

along with the threat of punitive action will help to restore efficiency in the private corporate sector. In future, companies on the basis of their proven efficiency will be in a position to raise required funds from the stock markets. Thus institutions will be largely relieved from financing corporate sector and the Government no more will have to act as a dumping ground of sick units.

****

NOTES (CHAPTER SIX)

1) Professor Baxi, Vice-Chancellor, Delhi University, while commenting on Indian management practices said, "the theory and practices of management would assess the soverign pre-rogative of managers and owners to gain exploitative access to unorganised labour, effortlessly and without liability cause industrial hazards, intensity pollution on environment, participate in organised corruption, exploit the vulnerable consumers, cause industrial sickness, obtain immunity for professional crimes (e.g. the amensty provision for FERA violations); subvert the legal profession into it's being the 'hired prize fighler for unfair and unethical business practices, purchase state officials, inflict occupational diseases and fatalities and subvert in all possible ways state regulatory efforts and measures. Clearly the Constitution and legal order of India enjoin that development of management sciences forbid political power in the managerial classes and the owners of the means of production to knowingly or intentionally harm individuals groups or communities. A managerial culture which allows this privelege and power is not merely unconstitutional but anti-constitutional. [Baxi 1991]

2) This aspect was discussed vividly in the first chapter.

3) This word 'contaminated' was actually used by the observers of the developed countries. Independent studies by the Ministry of Finance as well as the World Bank team comfirm that nearly 35% of the funds advanced by financial institutions are locked up in sick units and are the contaminted. (source- The Economic Times, 17th March 1991, Pg. 1)

4) Studies show that mismanagement including diversion of funds, lack of marketing strategy was the main reason for corporate

sickness (in 52% cases). Next, in order of importance was market recession which accounted for 23%. Labour troubles, power cuts, shartages and famely planning contributed the rest 25%. (Source : The Economic Times. 11th September 1988)

5) This is a very common allegation against company directors. Though hundreds of cases can be cited, yet for want for space two cases are cited here for the purpose of demonstration only.

(i) Karan Kumar Taneja (B2C/72A, Janak Puri, N.Delhi) who held shares of Nirman Mechanical Erectors (Ref. folio S-0581 and K-0256) did not receive any dividend or receive the balance sheet of the company, even after dividends were declared in the AGM.

(ii) Sudha Jain & K.K. Jain (G-80 Ashok Vihar, Phase 1 Delhi) held 115 share of Nippon Dendro (Ref. folio 80-2742). The company declared interim dividend at the rate of 15% for which the record date was 16.01.90. Even after three months the shareholder had not received any dividend.

6) This aspect did not escape the attention of Harold Geneen, former chief executive of the International Telephone and Telegraph company of U.S.A. In his words "under present conditions shareholders,whether individuals or institutions have virtually no way of knowing whether or not to manage their company over the years they have grown so soft and ineffectual that most often they are captive of management rather than effective representatives of the company owners." He also argued"... the prime function of a board of directors is to form continous judgements on whether or not the chief executive and his management team are running things properly".Present board system failed miserably in this respect Geneen further opined that the present system of functioning of board, lack of strict regulations to control the management wide

gap between authority and accountability are the main reasons contributing towards ineffective functioning of the board and they decline in productivity of American industry.

[Quoted in the article by L.C. Gupta, 1988]

7) This aspect was vividly discussed in the first chapter. If one moves in line with strict legal interpretations, institutions holding move than 25% of equity shares of a corporation can be said to be the actual owner of the said corporation . Since the average equity holding by Government controlled institutions is 26%, a large number of private sector corporations can effectively said to be owned by the Government.

8) To make the board broad based the institutions, in the case of medium sized projects (4 to 5 crores) determine the composition of the board in the following manner.

Represantatives of :-

(i) Promoters (in case of SIDC joint ventures)-3, (ii) Entrepreneurs-2 (iii) Central financial institutions-3. (iv) Public-3/ Total - 11.

In very large organisations this practice is also followed, but naturally the number of directors are move. For example in the case of Larsen & Tourbo Ltd's, board, financial institutions holding 37% of the stake of the company, had six nominee directors including the chairman. (The chairman was Mr. D.N.Gosh, former chairman of State Bank of India). Another controlling group the Ambanis, holding 25% of the stake had 3 director of the board. This was the position on May 1990.

9) FICCI in their memorandum submitted to the Narasimhanm Committee practically urged the Government to follow two distinct policies regarding takeovers. It stated, "as a general rule the institutions

should support the existing management unless the latter are found to be grossly deficient. This would bring about a compromise between the independence of management and the rights of the institutions as shareholders." [Memorandum to Narasimham Committee, FICCI, New Delhi.]

10) In Dr. L.C. Gupta's survey (conducted in 1982), 191 nominne directors, both official and non official were covered. These directors were requested to rank five specific ways of looking at the board's role, viz:

(a) Providing expert professional advice to the chief executive on specific matters,

(b) Acting as watchdog against managerial abuse,

(c) Acting as friend- philosopher- guide to the chief.

(d) generating pressure to drive the executive management to greater efforts and,

(e) ensuring social responsibility.

The findings of the study were that (a) and (c) were ranked highest by as many as 62.8% of the nominee directors; watch dog and control functions i.e., (b) and (d) were given rank 1 by only 28.9% of the respondent directors.

[Source: L.C. Gupta 1988]

11) Some examples of takeover cases are:- D.C.M., Escorts, Shaw Wallace, Dunlop, Standard Battery, Tiru Tea, Jokai Tea etc.

12) The fact that takeover mechanism can be partly effective to discipline management controllled firms was also stated by Peter Holl in the article " Control Type and Market for Corporate Control in Large U.S. Corporations." [The Journal of Industrial Economics, Vol, XXV, June 1977.]

REFERENCES (CHAPTER SIX)

(i) *Baxi, Upendra,* "Speech at the Indian Institute of Management, Calcutta." 26th Convocation, March 16 - 1991.

(ii)*Bhattacharya, S.K.,* " Corporate Board & Nominee Directors", Management Developement Institute Journal,1989.

(iii)*Desai, A.V.,* " Factors underlying the slow growth of Indian industry". Economic and Political Weekly, Annual Number, March 1981.

(iv) *Gupta, L.C.,* "Nominee Directors:- In Search of a Proper Role " Management Developement Institute Journal, August 1988.

(v) *" do "* "Excellence of a Board of Directors", Vikalpa, Volume 11, No 4. Oct-Dec. - 1986.

(vi) *Industrial Developement Bank India,* "Guidelines for use of Nominee Directors", January 1986.

(vii) *Mills, Geoffrey,* " On the Board", Allen and Unwin, London,1985

(viii) *Mukhi, M.D.,* "Financial Institutions - Role in Company Managements". The Economic Times, June 5, 1990.

(ix) *Narasimham Committee Report* [Committee to Examine the Prin -ciples of Possible Shift from Physical to Financial Control, Pg 25.]

(x) *Ramakrishnan, S.,* "Nominee Directors", The Chartered Secretary, September, 1980.

(xi) *Rostow, Eugene. V.,* " To whom and what ends is corporate management responsible". Ed.- Mason, E.S.,"The Corporation in Modern Society.", 1959

(xii) Sen, S.C., "New Frontiers of Company Law", pg 181
Eastern Law House, 1971.

(xiii) *Thanjavur,* "Companies Act Amendment Bill- Corporate Regulation in Reverse Gear".
Ecomomic and Political Weekly, December,1987.