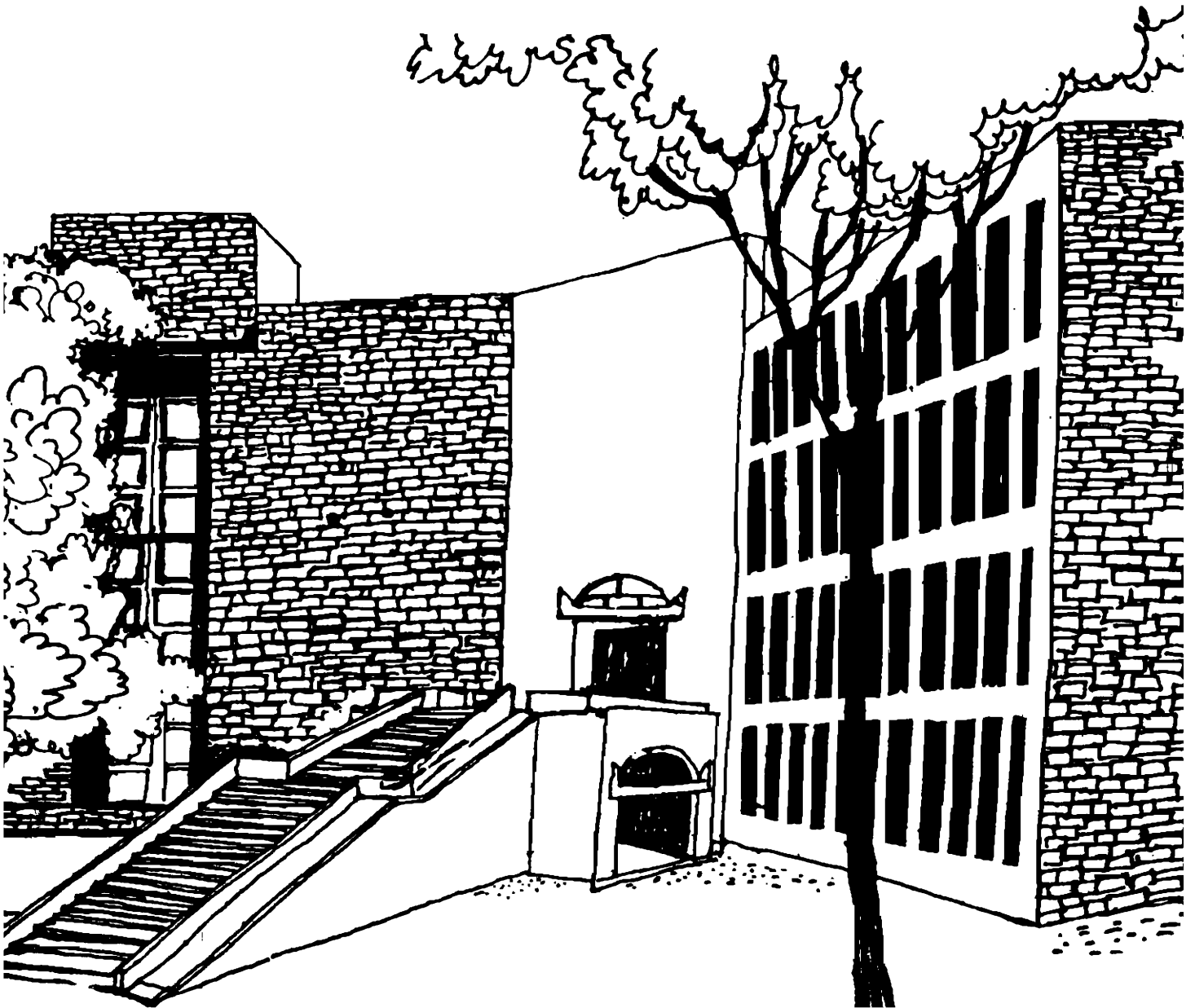# Working Paper

MANAGERIAL COMPENSATION IN INDIA:
A TEST OF ALTERNATIVE MODELS

By

Manjari Singh
Debashish Bhattacherjee

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INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD-380 015
INDIA

# MANAGERIAL COMPENSATION IN INDIA: A TEST OF

# ALTERNATIVE MODELS

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## MANJARI SINGH[@]

Visiting Assistant Professor, Personnel & Industrial Relations Area

Indian Institute of Management, Vastrapur,

Ahmedabad 380 015, India

Tel: +91-79-6307241/6308357 Ext. 4883

e-mail: manjari@iimahd.ernet.in


## DEBASHISH BHATTACHERJEE

Professor, Human Resources Group,

Indian Institute of Management Calcutta,

Joka, Diamond Harbour Road,

P.B. No. 16757, via Alipore P.O.,

Calcutta 700 027, India

Tel: +91-33-4678300 Ext. 159

e-mail: debashish@iimcal.ac.in

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# Managerial Compensation in India: A Test of Alternative Models

**Abstract:** This study attempts to econometrically model the determinants of managerial compensation in the Indian economy making use of a pooled cross-section and time-series data base that consists of 157 managers from eight companies for the time period 1977-97. The paper tests for the empirical validity of four alternative models/explanations of corporate compensation: firm performance, managerial discretionary power, human capital, and the tournament-based pay structure. The earning equations are developed for testing the various hypotheses and a generalised linear regression framework is used for analysing the data.

Key words: Managerial Compensation, Firm Performance, Human Capital, Tournaments, Indian Corporate Sector.

Recent economic policy changes in India, like liberalisation, privatisation and globalisation, have made the economic environment considerably more open and hence more competitive. In order to survive in such an environment, firms have to derive the best performance from their managers. To ensure this, firms must design proper incentives and rewards for good managerial performance.

Managers are supposed to be responsible for the performance of their entire unit. Hence, the likely measures of managerial performance are in terms of the measures of *firm performance*. Firm performance can be measured in terms of the size of the firm, the profitability of the firm and the returns to shareholders. The management, generally considered to be risk-averse, prefers the measure in terms of firm size. On the other hand, the measures for profitability and returns to shareholders are better measures of returns to the actual owners (shareholders). The drawback of the measures for profitability and returns to shareholders is that it motivates executives to sacrifice long term gains for short-term benefits. Some of the measures are sensitive to stock market conditions that are beyond the executives' control.

The separation of ownership and management, particularly in large corporations, has allowed managers more discretion in the operation of their firms. According to the agency theory perspective, principals are no longer managing the firms and hence may have less information regarding their firms than the agents who are managing them. This provides agents more opportunities to use discretionary powers. Hence, any study of managerial remuneration needs to consider the level of *managerial discretion*.

The earning differential among the executives in each firm indicates that individual-specific factors also play an important role in determining managerial remuneration. Labour economists have stressed the importance of *human capital* factors in improving the marginal productivity of individuals, which in turn leads to increase in their returns.

In order to explain the disproportionate inter-level salary differentials at the top level of

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hierarchical ladder, the theory of *tournament-based pay structure* is considered. According to this theory, promotions to next levels are based on rank-order tournament at each level. The winner at each level is the highest ranked player of that level and stands to attain considerable benefits. Players need to be given increasing benefits as the level increases in order to provide them enough incentive to strive to win at each level.

The theories mentioned above could be classified in the following four ways: firm performance model, managerial discretion model, human capital model and tournament-based pay structure model. These models attempt to understand managerial pay structure.

## IMPORTANCE OF THE STUDY

The managerial remuneration structure needs to be designed such that managers have proper incentives for directing managerial decision-making at improving the performance of their firm. The regression-based pay determination gives a fair idea as to how the executive pay structure of a firm is designed. In addition to this, regression-based pay determination helps in knowing the executive pay structure that will help in aligning executives' interests to firm's objectives. The usefulness of this study lies in determining the factors that affect the pay structure so that an incentive structure that aligns managerial interests to firm's objectives can be determined. The explanation of the earning differentials among managers can reflect the firm's incentive structure. According to our knowledge, this is the first study in Indian context, to consider firm performance, managerial discretion and human capital together, for remuneration of managers belonging to various levels of hierarchy. In addition, this study is also the first attempt to empirically test the tournament-based pay structure model in Indian context.

The data for this study is taken from Annual Reports of the companies. The validity of this data is ensured because it is taken from the published records. This has an advantage over questionnaire technique where the possibility of error or misinformation is high. However,

the reported gross income figures are underestimates of actual figures because the companies want to avoid public censure This condition is more likely to exist in the regulated economy prior to liberalisation though it can also exist after liberalisation. Even in this condition, the relative remuneration earned by managers at different levels of the organisation will be more or less accurately reflected, thus giving a more or less accurate picture of relative pay structures.

Various economic and political changes occurred during the period 1977 to 1997. Cross-sectional studies might have biases peculiar to the conditions of the years of these studies. The advantage of analysing the pooled data encompassing a long period is that it makes the study free from such biases. The regulated environment prior to 1991 might have artificially reduced the variation in managerial remuneration and generated some biases in the data. Hence, the study becomes more interesting when both pre and post liberalisation periods are considered.

Another point of interest in this study is that it considers the remuneration of each manager from 1977 to 1997. These managers have been working in the same organisation throughout this period and one can assume that they have been with their organisation for such a long time because their interests matches with the objectives of their organisation. Their pay will, therefore, reflect the organisational objectives better than the pay structure of managers who worked in an organisation only for a short period. However, it also may have been that they did not switch organisations because transaction costs were too high for them.

The study of the determinants of managerial remuneration also becomes interesting in the light of the fact that managerial remuneration is no longer regulated and subjected to a ceiling by the Government. A manager no longer needs to be paid, officially, less than Rs 15,000 a month, although the ceiling of 5% of the net profits for the managing director's remuneration still applies. With the recession going on for the last few years and performance of industrial

sector being below estimation, it is very important to see the effect of these conditions on the earnings of managers. This study tries to find economic justification for the seemingly disproportionately high earnings of the managers.

## CONCEPTUAL FRAMEWORK

In Indian context, there are only six studies related to managerial remuneration. Rao & Datta (1985, 1989a, 1989b) analysed the data from the Annual Report of 1980-81 of one of the largest companies in the Indian private sector in order to: (i) study the effect of hierarchy as an intermediate variable in the relationship of earnings with education and experience, (ii) used micro level data from the same source, to establish diminishing rates of return to schooling as per conventional human capital theory, and (iii) used this data to establish support for screening hypothesis and diminishing marginal productivity theory by using age-hierarchy profiles instead of age-earnings profiles for each schooling group.

Sen & Sarkar (1996) used data from the Annual Reports of seven companies in the Indian private sector for the year 1990-91, to examine various hypotheses made about incentive structures in managerial compensation. Singh & Bhattacherjee (1998) applied human capital theory for gender-based discrimination in a company for the year 1995-96 using the data given in the Annual Report of the company. Bhattacherjee, Jairam & Ravi Shankar (1998) studied the CEO pay sensitivity to firm performance taking 237 CEO-years of data for 56 Indian companies for the period 1985-97 from the Annual Reports of the companies.

### Firm Performance Model

With the separation of ownership and management, the managers are paid employees of the firm. The onus of successful working of the firm lies with the managers but they are not the residual claimants. They are expected to get returns for looking after the best interests of the firm. This implies that firm performance can be an important determinant of managerial remuneration.

According to the corporate-growth approach, the size of the firm has a significant effect on managerial remuneration (Baumol, 1959). Various parameters like sales (Howe, 1956; McGuire, Chiu & Elbing, 1962; Fisher & Govindarajan, 1992) and number of employees (Howe, 1956; Fisher & Govindarajan, 1992) have been taken as measures of the size of the firm. The size of the firm can also be measured in terms of total assets, market capitalisation and number of shareholders. After examining the empirical findings of the related studies, one would expect a positive and significant effect of firm size on managerial remuneration. Neo-classical economists opposed the corporate-growth approach and alternatively posited a profit-maximisation approach (Lewellen & Huntsman, 1970). According to this approach, return on investment (Watson, Storey, Wynarczyk, Keasey & Short, 1994) and returns to shareholders in terms of return on equity (Gomez-Mejia, Tosi & Hinkin, 1987; O' Reilly, Main & Crystal, 1988; Fisher & Govindarajan, 1992) and earnings per share (Gomez-Mejia et al., 1987) are significant determinants of managerial remuneration. To test the applicability of these approaches in the Indian context, the following hypothesis has been put forward.

*Hypothesis 1(a): The level of remuneration paid by a firm to its managers is positively affected by the size of the firm and/or the profitability of the firm and/or the returns to its shareholders.*

It is not just the present performance of the firm that determines the level of remuneration paid to its managers. Firms are hesitant to increase the level of managerial remuneration on the basis of the current year's performance and consider past performance also while deciding the level of managerial remuneration (McGuire et al., 1962; Gomez-Mejia et al., 1987; Werner & Tosi, 1995). Hence the following hypothesis is to be tested.

*Hypothesis 1(b): Good performance of the firm over the past three years will raise the level of remuneration paid to its managers.*

## Managerial Discretion Model

The agency theory perspective suggests that managers, as agents managing the firm, have a lot of discretionary power in running the corporation. The discretionary power of the agents influence their salary structure, conditional on certain external and internal factors. An important factor affecting managerial discretion power in influencing their remuneration is the composition of the Board of Directors (Williamson, 1963) which measures the percentage of managerial representation on the Board of Directors (BoD). This shows the extent to which managers' discretionary power is limited by outside interference. More representation on the BoD would obviously mean less outside interference. The individual-specific variable that can affect managerial remuneration through managerial discretion, is the indicator variable signifying the nomination of an executive to BoD (Leonard, 1990). If an executive is in the BoD, he has a good opportunity to influence the designing of the remuneration policy in his favour. The level of managerial discretion can also be affected by environmental factors like policy changes made by the government like the implementation of New Economic Policy (NEP) in India in 1991. This leads to the following hypothesis.

*Hypothesis 2: The amount of discretionary power wielded by the managers would positively affect the level of managerial remuneration.*

## Human Capital Model

The human capital perspective posits that managerial compensation is affected by both "general" as well as by "specific" human capital. Investment in "general" human capital increases the marginal productivity of an individual by exactly the same amount in all the firms where he can be employed. On the other hand, investment in "specific" human capital increases his marginal productivity in the firm he is currently employed and has no influence on his marginal productivity in any other firm. It is suggested that an individual's productivity will improve with an increase in "general" human capital, like number of years of education

(Leonard 1990; Fisher & Govindarajan, 1992), area of qualification, level of qualification, number of years of total labour market experience and other company experience, and hence earnings will increase as this increased productivity gets shared. Increase in "specific" human capital, like designation in the company (Crockett & Elias, 1984), can also increase a person's productivity in that firm thereby increasing his remuneration. This leads to the following hypothesis.

*Hypothesis 3: More investment in "general" human capital as well as "specific" human capital by an individual, gives better returns in terms of higher remuneration.*

**Tournament-based Pay Structure Model**

According to the tournament-based pay structure, remuneration increases as a person is promoted to a higher designation. The tournament-based pay structure is supposed to have increasing inter-level differences in managerial remuneration towards the higher levels of hierarchy in order to maintain incentives through all levels to the top (Rosen, 1986; Leonard, 1990). This theory is tested using the following hypothesis.

*Hypothesis 4: Controlling for returns to designation and job tenure, there are higher returns (in terms of higher remuneration) for promotion to higher levels.*

Thus, five testable hypotheses have been developed here. The firm performance model posits that the firm size, the profitability of the firm and the returns to shareholders have a positive effect on managerial remuneration. The managerial discretion model posits that the amount of discretion wielded by the managers have a positive effect on remuneration. The human capital model posits that investment in "general" as well as "specific" human capital leads to better returns. The tournament-based pay structure model posits that inter-level differences in rewards to managers should increase towards the higher levels of hierarchy in order to provide incentives at all levels, thus predicting that the inter-level spread increases towards the higher levels.

## ALTERNATE MODELS OF CORPORATE COMPENSATION

This section develops the models used to empirically test our various hypotheses. The variables used are taken either from previous studies related to managerial remuneration done in India and other countries or from observations about conditions peculiar to the Indian scenario. For considering the level of managerial remuneration, the dependent variable is the natural logarithm of the inflation adjusted annual gross remuneration of the managers $(\ln(rem)_{it})$. The data is analysed for each company separately.

### Firm Performance Model, Managerial Discretion Model and Human Capital Model

**Firm performance model:** In this model, the effect of the performance of a firm on the remuneration of its managers is tested. The variables used for firm size are: inflation adjusted rupee value of sales, inflation adjusted rupee value of total assets, inflation adjusted rupee value of the market price of total shares, number of employees and number of shareholders of the firm. The return on investment and the returns to shareholders are both important measures of the profitability of a firm. Returns to shareholders are measured in terms of return on equity and inflation adjusted rupee value of earnings per share. These variables for year $t$ are denoted by $sales_t$, $TA_t$, $mktcptl_t$, $emplys_t$, $shrhldr_t$, $ROI_t$, $ROE_t$ and $EPS_t$.

In order to incorporate past performance of the firm, the average of performance variables over the last three years are also considered. These variables for past performance are denoted by avgsales, avgTA, avgmktcptl, avgemplys, avgshrhldr, avgROI, avgROE and avgEPS (i.e., average of the respective values over the years (t-1), (t-2) and (t-3)).

**Managerial discretion model:** The variables taken in the study to measure the level of managerial discretion are percentage of managerial representation on the board of the company in the previous year $(manrep_{(t-1)})$ and an indicator variable indicating whether the executive is a member of Board of Directors $(BoD_{it})$. $BoD_{it}$ is a dummy variable that has

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value 1 when individual i is in BoD in year t and 0 otherwise The policy change made by government in the form of implementation of New Economic Policy is captured using a dummy variable that has value 1 from 1992 onwards and 0 otherwise ($NEP_t$).

**Human capital model:** In this model, the human capital effect on level of managerial remuneration is examined. The "general" human capital variables considered here are number of years of education of the individual (calculated as: (age - experience - 6)), number of years of total labour market experience, area of qualification, level of qualification, and whether the person worked in some other company before joining the present company. The "specific" human capital variable considered here is the level of hierarchy of the individual in the company and its value is taken to be 1 for highest designation and the value increases for subsequent lower designations. These variables for individual i in year t are denoted by $edu_i$, $exp_{it}$, $qualacc_i$, $qualeng_i$, $masters_i$, $othcoexp_i$ and $desig_{it}$. $Qualacc_i$ is a dummy variable that has value 1 if individual_i has done graduation and/or post-graduation in the area of commerce/accountancy and 0 otherwise. $Qualeng_i$ is a dummy variable that has value 1 if individual i has done graduation and/or post-graduation in the area of engineering and 0 otherwise. The excluded qualification categories are law, company secretary-ship, science and arts. $Masters_i$ is a dummy variable that has value 1 if individual i is a postgraduate or doctorate and 0 otherwise. $Othcoexp_i$ is a dummy variable that has value 1 if individual i has worked in some other company before joining the present company and 0 otherwise;

**Tournament-Based Pay Structure Model**

The variables taken for this model are designation ($desig_{it}$), number of years of experience of individual i in year t in the present job ($jobten_{it}$) and a term capturing the effect of promotion to higher level by multiplying promotion with designation ($prom_{it}$). $Desig_{it}$ is the designation or level in hierarchy of individual i in his company in year t and its value is taken to be 1 for highest designation and the value increases for subsequent lower designations. $Prom_{it}$ is a

dummy variable that has value 1 if individual *i* was promoted in year *t* and 0 otherwise;

Data that has been used for these models have been described in the following section.

## RESEARCH DESIGN

### The Data

The data for this study consists of details for 157 managers in eight companies during the period 1977-1997. The data for managerial remuneration is taken from the Annual Reports of the companies. It is provided as a separate annexure to the Directors' Report as per Section 217 (2A) of the Companies Act, 1956 read with the Companies (Particulars of Employees) Rules, 1975. The particulars available include information on: name; qualifications; age; designation/nature of duties; remuneration received (gross as well as net); total experience; date of commencement of employment in the company; and last employment. Here, the gross remuneration comprises salary, allowances and monetary value of perquisites and the net remuneration is the tax deducted gross remuneration. Gross remuneration has been taken for this study, considering it is a better measure of the total value of an employee to his company, in monetary terms.

Companies are required to provide particulars for the employees earning above a specified limit. This limit has been varying over the years: Rs 36000 per annum (or Rs 3000 per month) for 1976-87; Rs 72000 per annum (or Rs 6000 per month) for 1988-90; Rs 144000 per annum (or Rs 12000 per month) for 1991-94; and Rs 300000 per annum (or Rs 25000 per month) for 1995-97.

The sample of managers for the study is chosen such that it comprises of the managers who have been working in the company for the years under consideration. Remuneration figures are missing for the years for which the Annexures giving the Particulars of Employees could not be obtained. Remuneration figures are also missing for some managers for the years when their remuneration was less than the salary limit specified for providing particulars of

employees.

The remuneration figures given in the Annual Reports are for twelve months as per the financial year considered by the companies. In case of any change in the financial year of a company in any year, the remuneration figures are not for twelve months that particular year. In the study, such figures are adjusted to obtain remuneration for twelve months for that year. The names of the members of the Board of Directors of the companies are also taken from the Annual Reports of those companies. In addition, the data for the number of shareholders and the number of employees are taken from the Annual Reports of the companies publishing this data.

Data for firm performance is taken from the Stock Exchange Official Directory of Bombay Stock Exchange (BSE) of various years. This data is published every year for companies registered in BSE. The data includes information on: number of equity shares; earnings per share; market prices of the company's share (high as well as low in that financial year); total assets; net worth; sales; profit before depreciation, interest and tax; profit after tax; and preferential dividend.

The given parameters are either used directly, e.g. earnings per share, total assets and sales or are used to calculate derived parameters like market capitalisation, return on investment and return on equity using formulae (Chandra, 1995).

The firm performance figures are given on a twelve monthly basis per financial year of a company. This need not be the case for the years in which the company has made changes in the financial year. For such years, the firm performance variables like sales, return on investment, return on equity and earnings per share are adjusted to a twelve monthly basis.

Consumer Price Index (CPI) for urban non-manual employees with base year 1984-85 as 100, is taken from the CMIE (Center for Monitoring Indian Economy) Journals and RBI (Reserve Bank of India) Bulletins of various years.

The aim of the study is to examine the broad picture regarding determinants of managerial remuneration in the entire Indian private corporate sector. For this purpose, the companies are chosen in a way so as to represent different industries of the Indian corporate sector. The selection of the companies for this study is also limited by the lack of accessible data. The companies that belong to different industries and for which data is available are taken. The eight companies taken for this study are: Associated Cement Companies Limited (ACC); Britannia Industries Limited (Britannia); Hindustan Motors Limited (Hind Motors); Industrial Credit and Investment Corporation of India Limited (ICICI); ITC Limited (ITC); Larson & Toubro Limited (L&T); Philips India Limited (Philips India); and Tata Iron and Steel Company Limited (TISCO). ACC, Britannia and Hind Motors belong to cement industry, food product industry and automobile industry respectively. ICICI is a leading term-lending institution. ITC is a leading company in cigarette industry. L&T is a diversified company. Philips India and TISCO belong to electronics industry and steel industry respectively.

The companies can be classified on the basis of company size, rate of growth, product category, concentration ratio of the sector, position in product market and ownership category. This classification is based on the relative data of the companies taken for the study. The product market here is taken as the market for the product bringing maximum sales revenue to the company. The company size is measured in terms of sales not adjusted for inflation. Companies are categorised by size into three categories - large-sized, medium-sized and small-sized. These categories are in terms of relative size of the companies taken for the study. Large-sized companies are those companies that have average sales of more than Rs 15 billion during the period 1977-97. TISCO (with average sales of Rs 16,775,029,923) and ITC (Rs 15,782,573,538) belong to this category. Medium-sized companies are those that have average sales between Rs 5 billion and 15 billion. L&T (Rs 11,783,553,000), ACC (Rs 8,259,558,963) and ICICI (Rs 6,674,141,577) belong to this

category. Small-sized companies are those that have average sales less than Rs 5 billion. Hind Motors (Rs 4,476,258,815), Philips India (Rs 3,982,390,154) and Britannia (Rs 2,210,846,360) belong to this category.

According to their rates of growth, companies can be classified into three categories - high-growth, medium-growth and low-growth. High-growth companies are those that have compound growth rate of sales more than 20% per annum over the period 1977-97. ICICI (27.46%) and L&T (21.91%) belong to this category. Medium-growth companies are those that have compound growth rate of sales between 15% and 20% per annum. Philips India (15.41%) and TISCO (15.33%) belong to this category. Low-growth companies are those that have compound growth rate less than 14% per annum. ACC (14.56%), Britannia (14.46%), ITC (14.11%) and Hind Motors (13.37%) belong to this category.

According to product category, companies can be classified into non-durable, durable and services. Britannia and ITC belong to the first category. ACC, Hind Motors, L&T, Philips India and TISCO belong to the second category. ICICI belongs to the third category.

According to the concentration ratio of the sector, companies can be classified as high entry-barrier, medium entry-barrier and low entry-barrier companies. High concentration ratio of the sector means that there is high entry barrier in that sector and so the company belonging to that sector does not face high competition in the product market. High entry-barrier companies are those companies where concentration ratio of the sector is more than 95%. ITC and Hind Motors belonging to sectors having average concentration ratio of 99.61% and 95.57% respectively during 1992-97 belong to this category. Medium entry-barrier companies are those companies where concentration ratio of the sector is between 40% and 95%. Philips India (88.9%) and TISCO (61.18%) belong to this category. Low entry-barrier companies are those companies where concentration ratio of the sector is less than 40%. Britannia (35.69%) and ACC (30%) belong to this category.

According to position in product market, companies can be divided into three categories - dominant, competitive and dominated. Dominant companies are the indisputable market leaders in their product market. ACC, Britannia and ITC belong to this category. Competitive companies are the companies that face competition in their product market from a comparable rival. Philips falls in this category among the companies considered in this study. Dominated companies are those companies where there exists a rival company that is the indisputable market leader. Hind Motors and TISCO belong to this category and are dominated by public sector giants like Maruti Udyog Ltd. and Steel Authority of India Ltd. respectively.

According to ownership category, companies can be classified as family-run business and professionally managed business. If the promoter appoints the chairman or the managing director, then it can be called a family-run business. ACC, Britannia, Hind Motors and TISCO belong to this category. If the chairman or the managing director is appointed on professional recommendation (or say, most of the decisions are taken with the interests of the firm in mind instead of the group to which it belongs to), then it can be called a professionally-managed business. ICICI, ITC, L&T and Philips India belong to this category.

## Empirical Procedure for Analysing Data

The data is analysed for each company separately. Since the data encompasses a number of periods, the rupee values need to be adjusted for inflation (Finkelstein & Hambrick, 1989; Fisher & Govindarajan, 1992). Here, the rupee values are adjusted to 1984-85 rupee levels using CPI of urban non-manual employees.

In some Annual Reports the data for certain managers was missing. In such cases, the average of previous and next year's remuneration has been taken. The designation for the missing year is taken to be same as in the previous year for which it is available. The years for which the data was missing for most of the managers have been omitted. Data taken is:

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ACC - 12 managers for 19 years; Britannia - 6 managers for 15 years, Hind Motors - 13 managers for 19 years; ICICI - 23 managers for 16 years; ITC - 22 managers for 20 years; L&T - 39 managers for 12 years; Philips India - 19 managers for 13 years; and TISCO - 23 managers for 17 years.

The models used for analysis are particular types of Generalised Linear Regression Model called "cross-sectionally correlated and time-wise autoregressive model" and "cross-sectionally heteroskedastic and time-wise autoregressive model" (Kmenta, 1986). "Cross-sectionally correlated and time-wise autoregressive model" is used where number of cross-sectional units are less than number of years and "cross-sectionally heteroskedastic and time-wise autoregressive model" is used where number of cross-sectional units are more than number of years. In general, the regression equation for pooled cross-section and time-series data can be written as:

$$Y_{it} = \beta_1 X_{it,1} + \beta_2 X_{it,2} + \ldots + \beta_K X_{it,K} + \varepsilon_{it}; \quad (i = 1, 2, \ldots, N; t = 1, 2, \ldots, T).$$

The goodness-of-fit measure here is Buse R-square (Buse, 1979).

## RESULTS AND DISCUSSION

### Firm Performance Model, Managerial Discretion Model and Human Capital Model

The effect of each of the firm performance variables of the current year is considered separately. There is support for the Hypothesis 1(a), i.e., remuneration is positively affected by measures of firm performance of the same year. The results show that for all the eight companies considered in the study, firm size variables have significantly more effects on remuneration than variables measuring profitability or returns to shareholders. Sales or total assets explain the variation in remuneration to the largest extent. Sales have significantly positive effects in all the eight companies studied. Total assets have significantly positive effects in seven of the companies It can be inferred that firm size, in terms of sales or total assets, is a significant determinant of remuneration. The variables measuring firm

profitability and returns to shareholders do not have high explanatory power. In the Indian context, managers' remuneration is linked to stable measures that are not affected by market fluctuations. The profitability and the returns to shareholders do not affect remuneration to an appreciable extent, so the link between the gains to the actual owners (shareholders) and immediate managerial reward is weak.

This result clearly supports the corporate-growth approach compared to the profit-maximisation approach. It shows that managerial remuneration in India is strongly linked to the size of the firm and rather weakly linked to the profitability or the returns to shareholders. The managers prefer this view, as firm size is a more stable variable. One important implication that can be drawn from this result is that agents (managers) have more say in deciding the factors determining their remuneration compared to principals (shareholders). This is to be expected as the companies considered in the study are public limited companies having varied categories of shareholders, thus diffusing the influence of the shareholders in the running of the companies.

There exist negative relations between firm profitability and managerial remuneration and also between returns to shareholders and managerial remuneration in some of the companies. These negative relations may be due to the high remuneration paid by the companies to their managers in order to retain good managerial talent during bad phases. In general, it can be seen that firm profitability and returns to shareholders have very low explanatory power for variation in managerial remuneration. This can be explained by what is termed as "horizon problem" (Baber, Kang & Kumar, 1998). Managers' decision-horizon span can be much longer than their tenure. They have to take decisions that can be profitable in the long-term or in the short-term. If remuneration is strongly linked to profitability then there is a higher chance of sacrifice of long-term gains in favour of short-term benefits. In order to extend the decision horizon of the managers and mitigate the "horizon problem", managerial

remuneration is not strongly linked to firm profitability or returns to shareholders.

In order to see the effect of past firm performance, the average of last three years is taken. The advantage of taking the average of last three years is that yearly fluctuations are smoothened out. There is support for Hypothesis 1(b) that remuneration is positively affected by the measures of firm performance of the same year as well as by the measures of past firm performance. Here, only the significant variables have been considered. All variables could not be taken together since some were highly correlated. The results show that in addition to firm performance for the current year, the past firm performance also affects managerial remuneration. This implies that there is a lag factor in the effect of firm performance on managerial remuneration. The results also show more support for corporate-growth approach compared to profit-maximisation approach. In case of market capitalisation, it can be seen that the average of the last three years' has substantially more effect on managerial remuneration. This shows that fluctuations in the share prices do not have any immediate effect on managerial remuneration and only a long-term variation in the share prices affects remuneration.

It can be seen that there are differences in the explanatory powers of the firm performance model among the companies studied here. It is expected that the larger the size of the firm, the stronger will be the link between firm performance and managerial remuneration. This is because the magnitude of the principal-agent problem faced by a firm is directly proportional to its size (Bhattacherjee et al., 1998). It is however, difficult to derive conclusive evidence for this from the companies studied here because all the companies studied here are large companies. But, taking the three categories in the relative sense here, large-sized companies have comparatively lower explanatory power (TISCO: 63.66% and ITC: 60.52%), medium-sized companies have comparatively higher explanatory power (L&T: 82.97%, ACC: 60.64% and ICICI: 77.90%) and small-sized companies have comparatively lower explanatory power

(Hind Motors: 57.88%, Philips India: 73.72%% and Britannia: 51.07%). When the size increases from small to medium, the explanatory power of firm performance model increases, thus supporting the theory that increase in size leads to increase in principal-agent problem and larger firms are expected to have a stronger link between firm performance and managerial remuneration. But the explanatory power of this model *decreases* from medium to large companies. This is contrary to expectation. At present, no justification that explains this behaviour can be arrived at.

It is expected that the stronger the link between firm performance and managerial remuneration, the higher is the growth of the firm. ICICI and L&T, with explanatory power 77.90% and 82.97% are high-growth firms. Philips India (73.72%) and TISCO (63.66%) are medium-growth firms. ACC (60.64%), Britannia (51.07%), ITC (60.52%) and Hind Motors (57.88%) are low-growth companies. Thus, it can be seen that a stronger link between firm performance and managerial remuneration leads to better firm performance in terms of higher growth of the firm.

The effect of firm performance on managerial remuneration is expected to vary according to product category, concentration ratio of the sector, position in the product market and ownership category. When classified by product category, it is expected that firms in the service sector will have strong link between firm performance and managerial remuneration, as this sector is totally dependent on its human resources. ICICI with explanatory power 77.90% supports this. Firms in the durable sector have a strong link between firm performance and managerial remuneration (ACC: 60.64%, L&T: 82.97%, Philips India: 73.72% and TISCO: 63.66%). Hind Motors (57.88%) is the only exception in the durable sector among the firms studied here. Firms in the non-durable sector have a comparatively weaker link between firm performance and managerial remuneration (Britannia: 51.07% and ITC: 60.52%).

It is expected that the higher the concentration ratio of the sector, the weaker is the link between firm performance and managerial remuneration, since the companies which belong to sectors having higher concentration ratio will face lesser competition in their product market. High-entry barrier companies have low explanatory power (ITC: 60.52% and Hind Motors 57.88%). Medium-entry barrier companies have high explanatory power (Philips India: 73.72% and TISCO: 63.66%). Low-entry barrier companies have a comparatively lower explanatory power (Britannia: 51.07% and ACC: 60.64%). This shows that the link between firm performance and managerial remuneration increases from high-entry barrier companies to medium-entry barrier companies but decreases from medium-entry barrier companies to low-entry barrier companies. This decrease may be explained as follows: in low-entry barrier companies competition is very high and these companies try to acquire and retain good managerial talent by even paying managers better than the performance of the firm, thus weakening the link between firm performance and managerial remuneration.

When companies are classified according to position in the product market, it is expected that competitive companies will have a stronger link between firm performance and managerial remuneration than dominant as well as dominated companies. For dominant companies, there is no incentive for strengthening this link and these companies have comparatively lower explanatory powers (ACC: 60.64%, Britannia: 51.07% and ITC: 60.52%). For dominated companies also, there is no incentive for a stronger firm performance and managerial remuneration link and hence these companies also have comparatively lower explanatory powers (Hind Motors 57.88% and TISCO: 63.66%). Competitive companies have more incentive to have a strong link between firm performance and managerial remuneration and hence have comparatively higher explanatory powers (Philips India: 73.72%).

When companies are classified according to ownership category, professionally managed businesses are expected to have a stronger link between firm performance and managerial

remuneration than family-run businesses. This is because managers in professionally managed businesses have much more say in decision-making than managers in family-run businesses. Family-run businesses (ACC: 60.64%, Britannia: 51.07%, Hind Motors: 57.88% and TISCO: 63.66%) are seen to have a comparatively weaker link between firm performance and managerial remuneration. Professionally managed businesses (ICICI: 77.90%, L&T: 82.97% and Philips India: 73.72%) have a comparatively stronger link between firm performance and managerial remuneration. ITC (60.52%) is an exception here. The results show support for the Hypothesis 2 that the level of managerial discretion significantly affects remuneration. In general, the level of managerial remuneration has risen after the implementation of the NEP in 1991 (with the only exception of Hind Motors). The level of managerial discretion has increased considerably after liberalisation and globalisation. So the increased managerial remuneration can be considered to be a strong incentive for better performance in a more competitive environment. The appointment of an individual to the BoD is seen to have a positive effect on his remuneration in all the cases studied. Such an appointment raises the level of managerial discretion considerably and hence there is a strong link between the level of managerial discretion and the managerial reward.

The results pertaining to the effect of composition of BoD on managerial remuneration are interesting. The percentage of executives in the BoD in the previous year has a positive relationship to remuneration where the average percentage of executives in BoD over the years is less than 20% (ACC: 18.393%; Hind Motors: 11.651%; ICICI: 16.711%). In companies where the average percentage of executives in the BoD over the years is more than 20% (Britannia: 42.952%; ITC: 65.330%; L&T: 41.269%; Philips India: 66.107%; TISCO: 23.381%), the percentage of executives in the BoD in the previous year has a significantly negative effect on managerial remuneration. This implies that if there are only a

few executives in the BoD, then an increase in their strength leads to higher managerial remuneration, but if there are more executives in BoD, further increases in their strength have negative effects on their remuneration.

Professionally managed businesses are expected to have a stronger link between managerial discretion and managerial remuneration than family-run businesses because managers in professionally managed businesses have much more say in decision-making. Family-run businesses (ACC: 14.31%, Britannia: 15.03% and TISCO: 15.92%) have comparatively weaker links between managerial discretion and managerial remuneration. Hind Motors (53.86%) is an exception here. Professionally managed businesses (ICICI: 27.26%, ITC: 16.44%, L&T: 30.63% and Philips India: 36.05%) have comparatively stronger links between managerial discretion and managerial remuneration.

The results support for the Hypothesis 3 that remuneration is positively affected by the gain in human capital. There are significantly positive returns to "general" human capital like years of total labour market experience and "specific" human capital like designation in all cases. For "general" human capital like years of education, returns are significantly positive in six of the eight companies studied here. Returns to qualification in commerce/accountancy, qualification in engineering, post-graduate or doctoral degree and previous experience in some other company are positive or negative depending on the particular company's policy. A significantly negative returns to post-graduate or doctoral degree means that the company prefers people who do not have very high degrees but have more work experience (ITC). Some other companies prefer people with high qualifications (ACC, Hind Motors and TISCO). The significantly negative returns to other company experience means, that the company prefers in-company experience to outside experience (ACC and Hind Motors). These companies normally prefer fresh graduates. The significantly positive returns to other company experience means that the company prefers employees to have job experience prior

to joining the company (TISCO).

The explanatory power of human capital model for ICICI is very high (82.21%). This is because ICICI belongs to service sector and returns to human capital variables are expected to be high in this sector because of its total dependency on human resources. It is also to be expected that returns to human capital variables will be higher in professionally managed businesses compared to family-run businesses. The higher explanatory powers of human capital model in professionally managed businesses (ICICI: 82.21%, ITC: 43.42%, L&T: 43.66% and Philips India: 54.38%) than in family-run businesses (ACC: 30.92%, Britannia: 42.33%, Hind Motors: 21.95% and TISCO: 42.22%) support this.

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Insert Table 1 about here

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Table 1 shows the results for the combined model of firm performance, managerial discretion and human capital variables. Here, only significant variables are considered. The results show that after controlling for the firm performance and human capital, implementation of the NEP has a significantly negative effect in six of the eight companies studied. After controlling for firm performance, the implementation of the NEP has a significantly negative effect on managerial remuneration in five of the eight companies studied here (ICICI, ITC, L&T, Philips India and TISCO) and no significant effect in one (Hind Motors). The effect is significantly positive in only two of the companies (ACC and Britannia) when past performance is considered in terms of the average of the last three years. But the effect becomes insignificant when past performance is considered in terms of the average of the last five years for these two companies. The insignificant effect of the implementation of NEP after controlling for firm performance implies that the increase in remuneration since 1992 can be attributed to the improvement in firm performance and can be considered to be a

reward for better performance and is economically justifiable The negative value of the coefficient of NEP implies that managerial remuneration has decreased since 1992, after controlling for firm performance. This is a surprising result, as one would expect managerial remuneration to rise significantly after liberalisation even after controlling for firm performance. After controlling for human capital variables, the implementation of the NEP is seen to have insignificant or significantly negative returns.

The measures of firm performance, managerial discretion and human capital have significant effects on managerial remuneration. The appointment of a manager to the BoD and his designation are seen to have significantly positive returns in all cases. Past firm performance also has a significant effect on remuneration, showing a lag factor in the effect of firm performance on remuneration. Returns to the years of total labour market experience are significantly positive in only one company (Philips India), a significantly negative effect in one company (Hind Motors) and no significant effect in others (ACC, Britannia, ICICI, ITC, L&T and TISCO). Returns to the years of education has a significantly positive effect in four of the companies (Britannia, ITC, L&T and Philips India), a significantly negative effect in two of the companies (Hind Motors and TISCO) and no significant effect in the other (ICICI). Returns to other human capital variables like area of qualification, post-graduate or doctoral degree and other company experience are significantly positive or negative depending on the individual company's policy. The combined model has explanatory powers of more than 60% for all companies.

**Tournament-Based Pay Structure Model**

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Insert Table 2 about here

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Table 2 shows the effect of Tournament-Based Pay Structure Model on level of managerial

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remuneration. The results show that there are significantly positive returns to designation in seven of the companies studied (the exception is Hind Motors). In general, there are significant positive returns to promotion to higher designations (the exceptions are Philips India and TISCO). The coefficient has a negative sign because the highest designation has been given the value 1 and the values increase for lower designations. This means that remuneration increases as the level of designation to which one is promoted rises. This shows support for the tournament-based pay structure model. Also, in a majority of the companies, remuneration increases as the number of years in a job increases (the exception is Britannia). Explanatory power of the tournament-based pay structure model is very high in the firm belonging to the service sector (ICICI: 78.36%). This explanatory is comparatively high in the firms of the durable sector (ACC: 54.30%, L&T: 45.40%, Philips India: 56.28% and TISCO: 44.20%). Hind Motors (34.18%) is an exception here. This explanatory power is comparatively low in the firms of the non-durable sector (Britannia: 37.27% and ITC: 28.39%).

## CONCLUSION

The study econometrically modelled the compensation of 157 managers in 8 companies for the period 1977-97 in the Indian corporate sector. The study showed that managerial remuneration in India is strongly linked to the size of the firm and rather weakly linked to the profitability or the returns to shareholders. Past firm performance also has an effect on managerial remuneration in addition to firm performance for the current year. The fluctuations in the share prices do not have any immediate effect on managerial remuneration and only a long-term variation in the share prices affect remuneration.

When the firm size increases from small to medium, the explanatory power of firm performance model increases, thus supporting the theory that increase in size leads to increase in principal-agent problem and is expected to have stronger link between firm

performance and managerial remuneration  But, contrary to expectation, the explanatory power of firm performance model *decreases* from medium to large companies.

A stronger link between firm performance and managerial remuneration leads to better firm performance in terms of higher growth of the firm. Firms in the service sector have very strong links between firm performance and managerial remuneration, as this sector is totally dependent on its human resources. Firms in the durable sector have stronger links between firm performance and managerial remuneration compared to firms in the non-durable sector. The link between firm performance and managerial remuneration increases from high-entry barrier companies to medium-entry barrier companies but decreases from medium-entry barrier companies to low-entry barrier companies. The competitive companies have stronger links between firm performance and managerial remuneration than dominant as well as dominated companies. Professionally managed businesses have stronger links between firm performance and managerial remuneration than family-run businesses.

In the managerial discretion model, the level of managerial remuneration has increased after the implementation of the NEP in 1991. The level of managerial discretion has considerably increased after liberalisation and globalisation. Significant rewards for appointment to the BoD are also observed. The effect of composition of the BoD on managerial remuneration is also interesting. If the BoD contains just a few executives, then an increase in their strength leads to higher managerial remuneration, but in companies where there are more executives in the BoD, any further increase in their strength has a negative effect on managerial remuneration. Professionally managed businesses have stronger links between managerial discretion and managerial remuneration than family-run business because managers in professionally managed business have much more say in decision-making.

The surprising result is when controlling for firm performance, there has been not been significant increase in managerial remuneration after liberalisation. Thus, the increase in the

level of remuneration after the implementation of the NEP can be attributed to the improvement in firm performance. Higher remuneration of the managers after 1991 can be considered to be a reward for better performance.

There are significantly positive returns to "general" human capital like years of total labour market experience and years of education and "specific" human capital like designation. The returns to qualification in commerce/accountancy, qualification in engineering, post-graduate or doctoral degree and previous experience in some other company are positive or negative depending on the particular company's policy. As expected, the explanatory power of the human capital model for firms belonging to the service sector is very high. Returns to human capital variables are higher in professionally managed businesses than in family-run businesses.

After considering rewards for good firm performance, very few companies reward their executives for their number of years of total labour market experience or for their number of years of education but there are positive returns to designation in all the companies studied. Managerial remuneration in a majority of companies studied increases significantly as the level of designation to which one is promoted rises. This shows support for the tournament-based pay structure model. In addition, after controlling for designation, managerial remuneration increases as the number of years in a job increases. Explanatory power of this model is very high in the firm belonging to the service sector. This explanatory power is higher in the firms belonging to the durable sector than in the firms belonging to the non-durable sector.

A study of this nature in the Indian context is severely restricted by the lack of readily available published data. If more data is available then interesting extensions of the study are possible.

- Incorporating individual performances of the managers can enrich the study. This data is

not available in the source used by this study and can only be obtained from the companies.

- The study can be further improved if determinants of the fixed and the variable components of the remuneration can be found separately by breaking-up gross managerial remuneration into its various constituents like basic salary, perquisites, bonuses, etc.

- The study can be further extended for other companies in the private sectors and also for the companies in the public sector. A comparative study of the determinants of managerial remuneration in the private sector and in the public sector can provide guidelines for redesigning the incentive structure for the public sector companies that are performing badly.

- The study can also be extended to incorporate a comparative study of the determinants of managerial remuneration in India and in other countries. A comparison between determinants of managerial pay structure in developed countries and those in developing countries can show the differences in their economic environment and corporate governance.

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TABLE 1

**Company-Wise Results for Level of Managerial Remuneration Regressed on Firm Performance, Managerial Discretion and Human Capital Variables**

| Company: ACC | | Buse R-square = 0.7252 | F value = 79.672*** |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (217 df) |
| TA | 0.38039E-10 | 0.1457E-10 | 2.611** |
| avgshrhldr | 0.70649E-05 | 0.1084E-05 | 6.519*** |
| NEP | 0.24043 | 0.4510E-01 | 5.331*** |
| BoD | 0.48963 | 0.6708E-01 | 7.299*** |
| manrep | 0.92686 | 0.2536 | 3.655*** |
| desig | -0.38085E-01 | 0.7351E-02 | -5.181*** |
| qualacc | 0.16988 | 0.3342E-01 | 5.084*** |
| qualeng | 0.14430 | 0.3825E-01 | 3.772*** |
| masters | 0.19006 | 0.5235E-01 | 3.631*** |
| othcoexp | -0.80102E-01 | 0.1659E-01 | -4.829*** |
| Constant | 10.616 | 0.9263E-01 | 114.6*** |

| Company: Britannia | | Buse R-square = 0.7798 | F value = 63.731*** |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (81 df) |
| TA | 0.81276E-09 | 0.2077E-09 | 3.913*** |
| avgmktcptl | 0.27465E-09 | 0.4492E-10 | 6.114*** |
| NEP | 0.14693 | 0.6890E-01 | 2.132** |
| BoD | 0.34057 | 0.1004 | 3.391*** |
| desig | -0.29344E-01 | 0.8831E-02 | -3.323*** |

| | | | |
|---|---|---|---|
| edu | 0.99155E-01 | 0.1117E-01 | 8.873*** |
| qualeng | -0.72051 | 0.1313 | -5.488*** |
| masters | 0.41706 | 0.6474E-01 | 6.442*** |
| Constant | 10.103 | 0.2240 | 45.10*** |

| Company: Hind Motors | Buse R-square = 0.7466 | F value = 274.517*** | |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (234 df) |
| sales | 0.96671E-10 | 0.1687E-10 | 5.729*** |
| avgROI | 1.3967 | 0.1666 | 8.381*** |
| NEP | -0.50120E-01 | 0.2747E-01 | -1.825* |
| BoD | 0.17918 | 0.5285E-01 | 3.390*** |
| manrep | 1.2861 | 0.1154 | 11.15*** |
| exp | -0.53994E-02 | 0.2801E-02 | -1.927* |
| desig | -0.78982E-01 | 0.8386E-02 | -9.419*** |
| edu | -0.31925E-01 | 0.1082E-01 | -2.950*** |
| qualacc | 0.10255 | 0.4051E-01 | 2.531** |
| qualeng | -0.11142 | 0.3663E-01 | -3.042*** |
| masters | 0.30809 | 0.2351E-01 | 13.10*** |
| othcoexp | -0.30429 | 0.4538E-01 | -6.705*** |
| Constant | 12.258 | 0.2198 | 55.77*** |

| Company: ICICI | Buse R-square = 0.9047 | F value = 710.473*** | |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (362 df) |
| avgTA | 0.98805E-11 | 0.7362E-12 | 13.42*** |

| | | | |
|---|---|---|---|
| NEP | -0.12129 | 0.2395E-01 | -5.064[***] |
| manrep | -0.42200 | 0.1315 | -3.210[***] |
| desig | -0.91508E-01 | 0.7271E-02 | -12.58[***] |
| othcoexp | 0.32811E-01 | 0.1187E-01 | 2.764[***] |
| Constant | 11.602 | 0.5383E-01 | 215.5[***] |

| Company: ITC | | Buse R-square = 0.6870 | F value = 133.893[***] |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (431 df) |
| avgTA | 0.18241E-09 | 0.8449E-11 | 21.59[***] |
| avgEPS | 0.38934E-02 | 0.5466E-03 | 7.123[***] |
| NEP | -0.20582 | 0.2931E-01 | -7.023[***] |
| BoD | 0.42086 | 0.1607 | 2.619[***] |
| desig | -0.58266E-01 | 0.1352E-01 | -4.310[***] |
| edu | 0.25009E-01 | 0.7899E-02 | 3.166[***] |
| qualeng | -0.86095E-01 | 0.3295E-01 | -2.613[***] |
| masters | -0.17065 | 0.4358E-01 | -3.916[***] |
| Constant | 10.636 | 0.1766 | 60.22[***] |

| Company: L&T | | Buse R-square = 0.8684 | F value = 361.496[***] |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (458 df) |
| sales | 0.74806E-10 | 0.2462E-11 | 30.38[***] |
| ROE | 1.2014 | 0.2137 | 5.623[***] |
| avgEPS | 0.34583E-01 | 0.7704E-02 | 4.489[***] |
| NEP | -0.25282 | 0.2433E-01 | -10.39[***] |

| | | | |
|---|---|---|---|
| BoD | 0.61578 | 0 7398E-01 | 8 324*** |
| manrep | -0.63752 | 0.1717 | -3.712*** |
| desig | -0.81526E-01 | 0.9552E-02 | -8.535*** |
| edu | 0.11973E-01 | 0.4527E-02 | 2.645*** |
| qualeng | 0.37561E-01 | 0.1558E-01 | 2.411** |
| Constant | 11.247 | 0.1099 | 102.3*** |

| Company: Philips India | Buse R-square = 0.8227 | F value = 115.082*** |
|---|---|---|

| Variable Name | Estimated Coefficients | Standard Error | t – ratio (235 df) |
|---|---|---|---|
| sales | 0.72937E-10 | 0.2540E-10 | 2.871*** |
| avgmktcptl | 0.15991E-09 | 0.1697E-10 | 9.423*** |
| avgROI | -1.1452 | 0.2698 | -4.245*** |
| NEP | -0.31523 | 0.5937E-01 | -5.310*** |
| BoD | 0.71356 | 0.1004 | 7.108*** |
| manrep | 0.81919 | 0.1171 | 6.996*** |
| exp | 0.12007E-01 | 0.4215E-02 | 2.849*** |
| desig | -0.80140E-01 | 0.1538E-01 | -5.211*** |
| edu | 0.19469E-01 | 0.6056E-02 | 3.215*** |
| qualeng | 0.90885E-01 | 0.2749E-01 | 3.306*** |
| othcoexp | 0.70528E-01 | 0.2890E-01 | 2.441** |
| Constant | 10.461 | 0.2241 | 46.68*** |

| Company: TISCO | Buse R-square = 0.6168 | F value = 71.468*** |
|---|---|---|

| Variable Name | Estimated Coefficients | Standard Error | t – ratio (380 df) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| ROI | 0.28865 | 0.1659 | 1 740[*] |
| avgsales | 0.43022E-10 | 0.3628E-11 | 11.86[***] |
| avgROE | -1.5544 | 0.1908 | -8.146[***] |
| NEP | -0.91409E-01 | 0.3032E-01 | -3.015[***] |
| BoD | 0.55818 | 0.1863 | 2.996[***] |
| manrep | -0.14273 | 0.7629E-01 | -1.871[*] |
| desig | -0.48177E-01 | 0.9557E-02 | -5.041[***] |
| edu | -0.64910E-02 | 0.3103E-02 | -2.092[**] |
| qualeng | 0.47303E-01 | 0.1925E-01 | 2.457[**] |
| othcoexp | 0.59829E-01 | 0.2823E-01 | 2.119[**] |
| Constant | 11.562 | 0.1175 | 98.39[***] |

[***] Significant at 0.01 level (two-tailed test)

[**] Significant at 0.05 level (two-tailed test)

[*] Significant at 0.10 level (two-tailed test)

## TABLE 2

### Company-Wise Results for Tournament-Based Pay Structure Model

| Company: ACC | Buse R-square = 0.5430 | | F value = 98.194[***] |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (224 df) |
| desig | -0.21010 | 0.01233 | -17.04[***] |
| jobten | 0.016492 | 0.001678 | 9.827[***] |
| prom*desig | -0.012759 | 0.001507 | -8.468[***] |
| Constant | 12.409 | 0.07105 | 174.7[***] |

| Company: Britannia | Buse R-square = 0.3727 | | F value = 30.034[***] |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (86 df) |
| desig | -0.27086 | 0.03207 | -8.445[***] |
| jobten | -0.0082300 | 0.008104 | -1.015 |
| prom*desig | -0.036803 | 0.008080 | -4.555[***] |
| Constant | 12.596 | 0.1628 | 77.40[***] |

| Company: Hind Motors | Buse R-square = 0.3418 | | F value = 102.555[***] |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (243 df) |
| desig | -0.15878 | 0.009356 | -16.97[***] |
| jobten | 0.015092 | 0.001648 | 9.156[***] |
| prom*desig | -0.015654 | 0.001853 | -8.450[***] |
| Constant | 12.381 | 0.05618 | 220.4[***] |

| Company: ICICI | Buse R-square = 0 7836 | | F value = 460 245[***] |
| --- | --- | --- | --- |
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (364 df) |
| desig | -0.18715 | 0.005041 | -37.12[***] |
| jobten | 0.011751 | 0.004252 | 2.763[***] |
| prom*desig | -0.014414 | 0.003962 | -3.638[***] |
| Constant | 12.190 | 0.02369 | 514.5[***] |

| Company: ITC | Buse R-square = 0.2839 | | F value = 74.060[***] |
| --- | --- | --- | --- |
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (436 df) |
| desig | -0.30135 | 0.02023 | -14.90[***] |
| jobten | 0.020594 | 0.004054 | 5.080[***] |
| prom*desig | -0.021066 | 0.006034 | -3.491[***] |
| Constant | 12.934 | 0.08994 | 143.8[***] |

| Company: L&T | Buse R-square = 0.4540 | | F value = 160.137[***] |
| --- | --- | --- | --- |
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (464 df) |
| desig | -0.20910 | 0.009812 | -21.31[***] |
| jobten | 0.010871 | 0.005184 | 2.097[**] |
| prom*desig | -0.025167 | 0.003732 | -6.744[***] |
| Constant | 12.784 | 0.05996 | 213.2[***] |

| Company: Philips India | Buse R-square = 0.5628 | | F value = 122.426[***] |
| --- | --- | --- | --- |
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (243 df) |
| desig | -0.22612 | 0.01185 | -19.08[***] |

| | | | |
|---|---|---|---|
| jobten | 0.043863 | 0.005763 | 7.611[***] |
| prom*desig | -0.0046315 | 0.006229 | -0.7436 |
| Constant | 12.399 | 0.05702 | 217.4[***] |

| Company: TISCO | | Buse R-square = 0.4420 | F value = 132.348[***] |
|---|---|---|---|
| Variable Name | Estimated Coefficients | Standard Error | t – ratio (387 df) |
| desig | -0.14885 | 0.007550 | -19.71[***] |
| jobten | 0.023843 | 0.003473 | 6.865[***] |
| prom*desig | -0.0030398 | 0.003332 | -0.9124 |
| Constant | 12.218 | 0.04624 | 264.2[***] |

[***] Significant at 0.01 level (two-tailed test)

[**] Significant at 0.05 level (two-tailed test)

[*] Significant at 0.10 level (two-tailed test)