

CORPORATE PERFORMANCE: A PANEL DATA STUDY OF SELECTED COMPANIES

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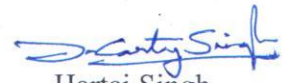
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CERTIFICATE

I hereby certify that the work which is being presented in this thesis entitled "Corporate Performance: A Panel Data Study of Selected Companies" in partial fulfillment of the requirements for award of the Degree of Masters of Philosophy in Economics, submitted in School of Behavioral Sciences and Business Studies, Thapar University, Patiala, is an authentic record of my own work carried out under the supervision of Dr (Ms) Ravi Kiran, Professor and Head and Dr Ash Narayan Sah Assistant Professor in School of Behavioral Sciences and Business Studies (SBSBS), Thapar University, Patiala.

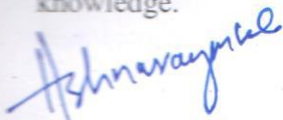
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Abbreviations

GDP	Gross Domestic Product
PPP	Public Private Partnership
HC	Health Care
B	Banking
FMCG	Fast Moving consumer goods
IT	Information Technology
Assocham	The Associated Chambers of Commerce and Industry of India
IIP	Index of Industrial Production
Q4	4 th Quarter in a year
ITeS	Information Technology Enabled Service
BPO	Business Process Outsourcing
CPG	Consumer Packaged Goods
FCA	Foreign Currency Assets
RBI	Reserve Bank of India
ATM	Automated Teller Machines
HDFC	Housing Development Finance Corporation
PE	Private Equity
M&A	Mergers And Acquisitions
IPO	Initial Public Offering
QIPs	Qualified Institutional Placements
FDI	Foreign Direct Investment
DIPP	Department of Industrial Policy and Promotion
BRICS	Brazil, Russia, India, China and South Africa.
REM	Random-Effect Models
OECD	Organisation for Economic Co-operation and Development
BSE	Bombay Stock Exchange
PROWESS	Database in Centre for Monitoring Indian Economy
EVA	Economic Value Added
EPS	Earning Per Share
ROCE	Return on capital employed

RONW	Return On Net Worth
FCF	Free Cash Flow
Kp	Capital Productivity
Lp	labor Productivity
CMIE	Centre for Monitoring Indian Economy
MVA	Market Value Added
CI	Competitive Intelligence
FICCI	Federation of Indian Chambers of Commerce and Industry
CII	Confederation of Indian Industry
ISO	International Organization for Standardization
FEM	Fixed Effects Model
LCM	Life-Cycle Model
CSO	Central Statistical Organisation
SBI	State Bank of India
GDP deflator	Is a measure of price inflation/deflation for a specific base year
MIMIC	Multiple Indicator Multiple Cause
Grsdp	Growth in Real Net State Domestic Product
Temp	Total Number of Factories on a State
NSE	National Stock Exchange
H ₀	Null Hypothesis
H ₁	Alternate Hypothesis
OLS	Ordinary Least Squares

Abstract

India since Independence followed a very restrictive corporate policy till 1990-91 where private corporate sector had very little scope to grow and flourish due to socialistic pattern of industrial development in which profit was considered as a ‘dirty’ word. Followed by balance of payment crisis in early years of 1990s economic reforms initiated comprising a variety of deregulatory measures which significantly altered the environment in which the Indian corporate sector operated earlier. The economic reforms since 1991 have brought many changes to the environment in which Indian companies previously operated. The principal aim of these reforms was to strengthen market discipline and promote greater competition by putting an end to the “license raj,” namely through the abolition of the Industries Development and Regulation Act (1951) and amendments to the Companies Act and several other major laws, which had imposed a heavy legal and regulatory burden on the corporate sector.

In addition, the foreign trade regime was liberalized through cuts in tariff rates, reductions in nontariff barriers, and a streamlining of import licenses; foreign investment opportunities were increased; and shareholders’ rights were improved. Indian companies were allowed to enter into joint ventures with multinational enterprises more freely, import new technologies and capital goods, expand productive capacity, and introduce new products without obtaining industrial licenses. More recently, steps have been taken to de-reserve a number of small-scale industries, particularly those industries with the greatest export potential.

India’s corporate sector has grown steadily over the past two decades in terms of number of registered companies and amount of paid up capital. The corporate sector consists of closely held (private limited) and publicly held (public limited) companies, with approximately 619,000 registered companies as of June 2003, about 40 percent of which are in the manufacturing sector. Private limited companies comprise the majority of firms in the corporate sector, but account for less than one-third of total paid up capital. Government-owned enterprises (both public and private limited) are comparatively few in number but large in size, accounting for more than 25 percent of the paid up capital. The share of total output by government enterprises has been declining since the start of

reforms, falling from 32 percent of gross industrial value added in 1991 to 25 percent in 2002.

India's corporate sector is supported by a well-established equity market. Currently, there are 23 registered stock exchanges in India, with total market capitalization of US\$131 billion at end-2002, equivalent to 26 percent of GDP and compared with 21 percent in 1990. The equity market is dominated by the Bombay Stock Exchange—the oldest in Asia—and the National Stock Exchange (NSE). The NSE began operations in 1994 in response to a government effort to improve the efficiency and transparency of India's equity market. It quickly established itself as the foremost stock exchange in the country. Efforts are under way to close and/or consolidate a number of regional stock exchanges that have been generally thinly traded but largely sustained by listing requirements governing publicly traded companies operating in a different region.

During the reform period, India's corporate sector initially strengthened, but in recent years, it has shown signs of weakening in line with the slowdown in economic growth and industrial production. Though the pace of economic reform has faltered in recent years but the overall direction of policy change remains the same and seeks to strengthen market discipline and enhance competition. The success of the new policy regime was expected to and is likely to depend on the strategies adopted by firms in response to these policies and fine tuning of policies by taking cognizance of emerging trends in firm level choices.

In this backdrop, this study tried to explain the performance of the Indian corporate sector during 2008 and 2012. We selected four sectors namely IT, FMCG, Infra and Healthcare sector for studying performance of the Indian corporate sector. From each sector, four companies were selected on the basis of their market capitalization from 2008 to 2012. Data on profit, sales turnover, total assets, debt/equity ratio, and return of assets were collected for the study.

Statistical tools such as descriptive statistics, ANOVA, regression and panel data regression used for studying corporate performance in India. Results showed that corporate performance in India is explained by sales turnover and size of total assets of companies.

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

India since Independence followed a very restrictive corporate policy till 1990-91 where private corporate sector had very little scope to grow and flourish due to socialistic pattern of industrial development in which profit was considered as a 'dirty' word. Followed by balance of payment crisis in early years of 1990s economic reforms initiated comprising a variety of deregulatory measures which significantly altered the environment in which the Indian corporate sector operated earlier. The following were some of the measures of industrial deregulation taken to free the Indian corporate sector

- Elimination of Capacity Licensing
- De-reservation of industries reserved for Public Sector
- Removal of MRTP Act and Restrictions on Large Companies
- Termination of Phased Manufacturing Programmes
- Better Access to Foreign Technology
- Revision of Patent Regime
- Freeing of Foreign Direct Investment
- Programme of SSI De-reservation

The economic reforms since 1991 have brought many changes to the environment in which Indian companies previously operated. The principal aim of these reforms was to strengthen market discipline and promote greater competition by putting an end to the "license raj," namely through the abolition of the Industries Development and Regulation Act (1951) and amendments to the Companies Act and several other major laws, which had imposed a heavy legal and regulatory burden on the corporate sector.

In addition, the foreign trade regime was liberalised through cuts in tariff rates, reductions in nontariff barriers, and a streamlining of import licenses; foreign investment opportunities were increased; and shareholders' rights were improved. Indian companies were allowed to enter into joint ventures with multinational enterprises more freely, import new technologies and capital goods, expand productive capacity, and introduce new products without obtaining industrial licenses. More recently, steps have been taken to de-reserve a number of small-scale industries, particularly those industries with the greatest export potential.

India's corporate sector has grown steadily over the past two decades in terms of number of registered companies and amount of paid up capital. The corporate sector consists of closely held (private limited) and publicly held (public limited) companies, with approximately 619,000 registered companies as of June 2003, about 40 percent of which are in the manufacturing sector. Private limited companies comprise the majority of firms in the corporate sector, but account for less than one-third of total paid up capital. Government-owned enterprises (both public and private limited) are comparatively few in number but large in size, accounting for more than 25 percent of the paid up capital. The share of total output by government enterprises has been declining since the start of reforms, falling from 32 percent of gross industrial value added in 1991 to 25 percent in 2002.

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been generally thinly traded but largely sustained by listing requirements governing publicly traded companies operating in a different region.

During the reform period, India's corporate sector initially strengthened, but in recent years, it has shown signs of weakening in line with the slowdown in economic growth and industrial production. Though the pace of economic reform has faltered in recent years but the overall direction of policy change remains the same and seeks to strengthen market discipline and enhance competition. The success of the new policy regime was expected to and is likely to depend on the strategies adopted by firms in response to these policies and fine tuning of policies by taking cognisance of emerging trends in firm level choices.

1.2 OVERVIEW OF INDIAN ECONOMY: PHASES OF GROWTH

The Indian economy grew at a comparatively low rate of 3.5 per cent from 1950 to 1980. The annual growth rate of Gross Domestic Product (GDP) in the 50s was 4.1 per cent, followed by a growth rate of 3.8 per cent in the 60s and 3.3 per cent in the 70s. The strategy for industrialisation was based on 'heavy industries' first strategy. Pandit Nehru's Economic Ideas have been clearly articulated in the 'Discovery of India' when he said, "No country can be politically and economically independent unless it is highly industrialised and has developed its power resources to the utmost. Nor can it achieve and maintain a high standard of living without the aid of modern technology in almost every sphere of life." Heavy industrialisation involved lumpy investment with high capital output ratios and long gestation period. Inadequate infrastructure and lack of experience increased the gestation period further leading to increasing costs. To protect the high cost domestic industry from foreign imports, trade was restricted and high level of protection was provided by imposing tariffs and quotas. The heavy industry first strategy created a plethora of controls, procedures, permits and bureaucratic restrictions.

A shift in direction took place in 1980 when congress back in power, brought in legislation to remove constraints that hinder industrial growth and efficiency. The emphasis was now on better capacity utilisation along side capacity creation to achieve economies of scale. Export promotion was another key policy objective during this era. Other policy changes included liberalisation of direct foreign investment with Multinational Corporations being allowed to increase the foreign owned proportion of their equity and to enter into collaboration with Indian private and public sector companies. The private sector long burdened with excessive regulation took advantage of the new opportunities to expand, diversify and modernise. The growth rate of gross domestic product in the 80s crossed 5 per cent per annum. Between 1980-81 and 1990-91, the growth rate of the economy was 5.6 per cent per annum. The growth during this era was spearheaded by a handful of sunrise industries, namely, chemicals, electric machinery, electronic appliances etc. However the industrial growth didn't have a suitably corresponding multiplier effect as these high growth industries were highly capital-intensive and backward-linkage benefits largely went to foreign suppliers of imported equipment.

The growth though impressive, had a narrow base, being confined to few industries. The situation was made worse by a huge-balance of payments deficit. The economic scene reached its nadir in May-June 1991, with foreign exchange reserves down to one billion United States dollar, a more than 16% inflation rate, a consistently falling industrial production and ballooning debt burden and balance of payments gap.

The crisis provided an opportunity for a major reorientation of Indian economic policy. The New Economic Policy of 1991 was conceived of against this backdrop and was designed to restore order to economic chaos. The policy sought to restructure the Indian Economy along the rational lines and to integrate it with the world economy. This objective was sought to be achieved by dismantling of hampering regulation, so as it eliminate delays and inefficiency, placing a greater

reliance on market forces and private enterprise and by a resolute pursuit of technological up-gradation.

The average growth rate between 1991 and 2000 was 6.1 per cent. So there was a significant acceleration in GDP from 3.5 per cent from 1950 to 1980 to 5.7 per cent in the eighties and a further acceleration to 6 per cent in nineties. Infact during the three years period 1994-95 to 1996-97 the growth rate exceeded 7 per cent and average growth rate for the three years was 7.5 per cent. The rate of growth of GDP decreased in 1997-98 but it increased again in 1998-99 and 99-2000 where it was above six per cent. The industry in this decade grew at a rate of 6.6 per cent per annum. Agricultural growth during the same period is 3.2 per cent. The rate of growth of GDP in this decade has been so far the highest since independence.

1.3 CORPORATE SECTOR IN INDIA:

Corporate Sector in India comprises all non-government financial/non-financial corporate enterprises and co-operative institutions. Non-government non-financial enterprises include public and private limited companies (inclusive of foreign controlled rupee companies/ foreign direct investment companies) registered as joint stock companies under the Companies Act, 1956. Non-government financial institutions constitute all scheduled and non-scheduled commercial banks in the private sector, other financial and investment companies engaged in activities such as financing of hire-purchase, transactions in shares and commodities & financing of loans or investment in securities, housing finance companies and insurance companies. Co-operative institutions comprise all co-operative banks, co-operative credit and non-credit societies.

The Indian corporate sector has two main components, namely, the government owned and privately owned companies. The size of both the components, in terms of numbers and capital, has grown fast, particularly since beginning of the 'seventies. Government companies are mainly in the basic, heavy and capital

intensive industries whereas the private sector is predominantly in industries which cater to the consumer markets directly.

Being government owned enterprises, the choice of investment, location, pricing, employment and all other important policies are centrally decided. These have to be in conformity with the macro and socio-economic objectives -- which are multiple and sometimes even self-contradictory. The constituents of the private sector do not have multiple objectives to pursue; the purpose of a private business organisation is clear i.e. to operate as a business enterprise -- and business means, profit and economic advantage and not social service. The primary test of performance of a private enterprise is in terms of the profits it can make.

Private corporate sector, unlike the government sector which comprises of about a little more than thousand companies, consists of more than two lakh units.

In 1956-57, the number of 'public limited' private sector companies was 8,771. In 1982 the number of companies was 72402 and increased to 732169 in 2006. The sector is marked by the existence of high degree of concentration, *i.e.* a small number of large sized companies enjoying a dominant place.

The Planning Commission has proposed that investment in infrastructure would almost double at U.S. \$ 1,025 billion in the Twelfth Five Year Plan (2012-17), compared to U.S.\$ 514 billion in the Eleventh Plan out of which 50 percent of the investment is expected to come from private sector. Goldman Sachs, the investment banking company said that India's infrastructure industry will require U.S. \$ 1.7 trillion investment in the next 10-years. This year the government also approved licensing of land for Public Private Partnership, (PPP) projects at 12 major ports of India.

Joshi (1994) attempted to estimate the real rates of return to investment in the public and private sectors. Bhaya (1990) used time series data from 1981-82 to

1985-86 published annually for the public and private sector by the survey of industries. He used three indicators of efficiency, viz. money, workforce and material. On the basis of the evidence available, Bhaya concluded that barring the burden of the fixed capital over which the public sector management has no control and despite higher wages and administered prices over which the management has no control, efficiency in public sector is in no way inferior to the private sector. Jha (1992) uses Annual Survey of Industries data for the years 1960-61 to 1982-83 for our industries: cement, cotton textiles, electricity, and iron and steel in another study. The latter two industries are primarily in the public sector while the first two are owned predominantly by private interests. The researchers do not find any evidence of allocate inefficiencies in general and each of them is relatively as efficient as one another.

Sharma and Sinha (1995) have used Cobb- Douglas production function to study productive efficiency (or Economic efficiency), which combines both technical and allocative efficiencies for the cement industry in India. Majumdar (1995) evaluated relative performance difference between the government owned, joint sector and private sectors of Indian industry.

The liberalised economic policy in India led to the entry of more private and foreign players in to the Indian Industry which in turn has led to a cut-throat competition which influenced the financial performance of the Indian companies. Hence, it becomes imperative to assess the financial health of the Indian companies in terms of its liquidity, profitability and sales. The present study attempts to analyse financial performance of a few selected companies from Health Care (HC), Banking (B), Fast Moving Consumer Goods (FMCG), and Information Technology (IT) to draw broad conclusions of the impact of liberalisation on performance in these sectors in specific and on Indian industry in general. As the basic difference between private and public ownership is the difference in objectives, viz; welfare maximisation by the public sector and profit

maximisation/sales maximisation by the private sector. It is imperative to briefly discuss the business motives of the firms before proceeding further.

India's GDP growth in Q3 of 2012-13, at 4.5 per cent, was the weakest in the last 15 quarters. Along with the deceleration of overall economic growth, financial performance of industry also witnessed deceleration, said a just concluded analysis by apex industry body Assocham. IIP growth in January 2013 was 2.4% and February 0.6%. Growth in the core industries, which account for 37.9% of IIP, witnessed a slower growth of 3.15 % in January 2013 and February 2013 it was -2.5%. The financial performance of 45 industry players in Q4 2012-13 indicated that their aggregate net sales declined by 2.9 per cent. While in the previous quarter of the same year, net sales have grown by 7.9 per cent on quarter on quarter basis.

There has been an increase in sales, expenses and profits of the IT sector in the current quarter. The sales of the sector increased by 16.8 per cent, whereas the expenses increased by 27.4% and profits increased by 8.2%. The sales and expenses of the I.T sector have more or less been the same in contrast to the last quarter, but there is a decline seen in the total profits.

The banking and services sector has shown an increase in sales by 5.2 per cent, expenses by 6.4 per cent and profits by 8.2 per cent. Although the sector has shown growth in all parameters but in contrast to the previous quarter, sales and profits have declined but expenses have increased.

1.4 THEORETICAL BACKGROUND

Since the study is dealing with corporate performance- a panel data study of selected companies, hence it is essential to gain an insight to various theories of the firm used for gauging the performance of the firms.

1.4.1 Profit Maximisation Model

Business is conducted primarily to earn profits. The amount of profit earned measures the efficiency of a business. The greater the volume of profit, the higher is the efficiency of the concern. The profits are measured by analysing the profitability of investments attained by the business. Accounting profit is total revenue minus explicit costs is known as. When economists speak of profit, they mean profit after taking account-foregone incomes - interest, salary and rent of the resources owned and used by entrepreneur for which there is no direct payment. They are included in implicit cost. The implicit cost means opportunity cost (explicit and implicit cost). The profit arrived at by deducting imputed costs from accounting profit can be called economic profit.

$$\text{Economic profit} = \text{Accounting profit} - \text{Imputed cost (Implicit cost)}$$

Profit-making is one of the most traditional, basic and major objectives of a firm. Profit-motive is the driving-force behind all business activities of a company. It is the primary measure of success or failure of a firm in the market. Profit earning capacity indicates the position, performance and status of a firm in the market. In spite of several changes and development of several alternative objectives, profit maximisation has remained as one of the single most important objectives of the firm even today.

All firms, whether small and large firms consistently attempt to maximise their profit by adopting new and novel techniques in business. Specific efforts are made to maximise output and minimise production and other operating costs. Cost reduction, cost cutting and cost minimisation has become the slogan of a modern firm. It is a very simple and unambiguous model. Thus, till date it remains as the single most ideal model that probably explains the normal behavior of a firm.

1.4.2 Sales Maximisation Model

According to the sales-maximisation model introduced by William Baumol and others, managers of modern corporations seek to maximise sales after an adequate rate of profit has been earned to satisfy stockholders. Maximising sales revenue is an alternative to profit-maximisation.

Baumol argued that a larger firm may feel more secure, may be able to get better deals in the purchase of inputs and lower rates in borrowing money, and may have a better image with consumers, employees, and suppliers. Sales maximisation is another possible goal and occurs when the firm sells as much as possible without making a loss. Baumol's research focused on the behaviour of manager-controlled businesses - where the day-to-day decisions taken by managers are divorced from the shareholders (the owners of the business). Baumol argued that annual salaries and other perks might be more closely correlated with total sales revenue rather than bottom line profits.

Indeed, some early empirical studies found a strong correlation between executives' salaries and sales, but not between salaries and profits.

1.4.3 Williamson's Model of Managerial Discretion

An alternative view was put forward by Williamson (1963), who built a model based on the concept of managerial satisfaction (utility). The managerial theory of firm developed by Oliver E. Williamson states that managers apply discretion in making and implementing policies to maximise their own utility rather than trying for the maximisation of profit, which ultimately maximises the utility of owner shareholders. This is known as the management utility maximisation.

It postulates that with the advent of the modern corporation and the resulting separation of management from ownership, managers are more interested in maximising their utility, measured in terms their compensation (salaries, fringe

benefits, stock options, etc.), the size of their staff, the extent of control over the corporation, lavish offices, etc., than in maximising corporate profits.

1.4.4. Satisficing

The advocates of satisficing theory say that firm's goal should be satisficing rather than optimising. Satisficing means acceptance of less than the best. Maximising behaviour may be replaced by satisficing, i.e. setting minimum acceptable levels of achievement. They argue that the behavior of real-world managers is not always consistent with the profit-maximisation goal.

Because of the great complexity of running the large modern corporation – a task often complicated by uncertainty and a lack of adequate data – managers are not able to maximise profits but can only strive for some satisfactory goal in terms of sales, profits, growth, market share, and so on. Simon called this **satisficing behaviour**. That is, the large corporation is a satisficing, rather than a maximising organisation.

1.4.5 Cyert and March's Behavioral Theory

Cyert and March opined that a large-scale corporate type of firm exists these days. Hence, entrepreneur cannot alone be a decision maker. The decision-making involves a complex group or organisation. It consists of various individuals whose interest may conflict with each other.

The group is called 'organisational coalition' and includes managers, stockholders, workers, consumers and so on. All of these individuals participate in setting the goals of an organisation.

Unlike conventional theory of single goal, behavioral theory states that an organisation has multiple goals. The real world firm generally possesses the following five goals:

- i) **Production Goal:** According to this goal, production should not fluctuate too much nor fall below an acceptable level. Because this ensures stable

employment, maintenance of adequate cost performance and growth, the workers and those in production department have this goal.

- ii) ***Inventory Goal:*** This goal originates mainly from the inventory department, or from the sales and production departments. The sales department needs enough stock of output for the customers, while the production department requires adequate stocks of raw materials and other items necessary for a uniform flow of the output.
- iii) ***Sales Goal:*** The sales goal is simply an aspirations with respect to the level of sales. Particularly, this goal arises from salesmen, since their success depends on their ability to maintain or expand the sales.
- iv) ***Market-share Goal:*** This goal is an alternative to the sales goal and arises from the sales department. This department decides on the advertising campaigns, the market research programs, and so on.
- v) ***Profit Goal:*** This goal is set by the top management in order to satisfy the demands of shareholders and the expectations of bankers; and also to generate funds with which they can achieve their own goals and projects, or satisfy the other goals of the firm.

While making decisions, firms are guided by these five goals. The conflict among different goals may come up. For example, sales goal may require a lower price whereas the profit goal a higher price. Sales and production goal may require high inventories whereas profit goal may require low inventories. Such conflicts among coalition members are resolved within the firm as a result of persuasion and accommodation of each other's viewpoint.

The firm in the behavioral theories seeks to *satisfice* overall performance, rather than maximise profits, sales or other magnitudes. The firm is a satisficing organisation rather than a maximising entrepreneur. The top management, accountable for the coordination of the activities of the various members of the firm, want:

- to attain a '*satisfactory*' level of production,

- to attain a ‘*satisfactory*’ share of the market,
- to earn a ‘*satisfactory*’ level of profit
- to divert a ‘*satisfactory*’ percentage of their total receipts to research and development or to advertising,
- to acquire a ‘*satisfactory*’ public image, and so on.

Thus, there are various motives of the firm, but the present study will focus only on profit maximisation and sales maximisation, the most accepted models for measuring Corporate performance through panel data analysis for four growing sectors of the economy.

Information Technology Sector

The Information Technology (IT) and Information Technology Enabled Services (ITeS) industry has been one of the key driving forces fuelling India’s economic growth. India is one of the fastest-growing IT services markets in the world, with three-quarters of large Indian enterprises planning to increase IT spending in 2013, with an average IT budget of US\$ 12.2 million, according to a survey by Gartner.

The Indian IT-business process outsourcing (BPO) sector including the domestic and exports segments continue to grow from strength to strength, witnessing high levels of activity both onshore as well as offshore. The companies continue to move up the value-chain to offer higher end research and analytics services to their clients. India's leadership position in the global IT and BPO industries are based primarily on the following advantages.

There has been an increase in sales, expenses and profits of the I.T sector in the current quarter. The sales of the sector increased by 16.8 per cent, whereas the expenses increased by 27.4% and profits increased by 8.2%. The sales and expenses of the I.T sector have more or less been the same in contrast to the last quarter, but there is a decline seen in the total profits.

The banking and services sector has shown an increase in sales by 5.2 per cent, expenses by 6.4 per cent and profits by 8.2 per cent. Although the sector has shown growth in all parameters but in contrast to the previous quarter, sales and profits have declined but expenses have increased.

Fast Moving Consumer Goods Sector

FMCG industry, alternatively called as CPG (Consumer packaged goods) industry primarily deals with the production, distribution and marketing of consumer packaged goods. The Fast Moving Consumer Goods (FMCG) are those consumables which are normally consumed by the consumers at a regular interval. Some of the prime activities of FMCG industry are selling, marketing, financing, purchasing, etc. The industry also engaged in operations, supply chain, production and general management.

FMCG industry provides a wide range of consumables and accordingly the amount of money circulated against FMCG products is also very high. The competition among FMCG manufacturers is also growing and as a result of this, investment in FMCG industry is also increasing, specifically in India, where FMCG industry is regarded as the fourth largest sector with total market size of US\$13.1 billion. FMCG Sector in India is estimated to grow 60% by 2010.

Banking Sector

Banking is the heart of India's financial services sector. The Indian banking sector has seen unprecedented growth along with remarkable improvement in its quality of assets and efficiency since economic liberalisation began in the early 1990s. The banking industry has undergone numerous changes over the past few years to be at par with international banking norms and standards. While the banks' motive has shifted from social banking to profit banking, dependence on ledgers, documents, cheques and slips has been replaced by electronic initiatives or cashless banking. Earlier customers used to approach banks to avail their services, but now banks approach them to market their offerings. With increasing

competition and better quality of services, customised service solutions seem to be the future of banking.

Mr Fred Hochberg, the US Exim Bank Chief, feels strong about India's long-term growth prospects. Exim Bank's exposure to India is US\$ 8.5 billion of its total portfolio of US\$ 108 billion and the concentration in India is expected to get bigger in 2013-14.

According to the Reserve Bank of India (RBI)'s 'Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks', March 2012, Nationalised Banks accounted for 53.0 per cent of the aggregate deposits, while the State Bank of India (SBI) and its Associates accounted for 21.8 per cent. The share of New Private Sector Banks, Old Private Sector Banks, Foreign Banks, and Regional Rural Banks in aggregate deposits was 13.0 per cent, 4.8 per cent, 4.4 per cent and 3.0 per cent, respectively. Nationalised Banks accounted for the highest share of 52.0 per cent in gross bank credit followed by State Bank of India and its Associates (22.5 per cent) and New Private Sector Banks (13.5 per cent). Foreign Banks, Old Private Sector Banks and Regional Rural Banks had shares of around 4.8 per cent, 4.8 per cent and 2.4 per cent, respectively.

Another statement issued by the RBI revealed that foreign exchange reserves increased by US\$ 1.05 billion and stood at US\$ 293.37 billion for the week ended March 22, 2013. Foreign currency assets (FCAs), a major component of the forex reserves, stood at US\$ 260.41 billion while the gold reserves amounted to US\$ 26.292 billion

Furthermore, India's economic expansion has made Indian banks more global in their approach. Ten banks have opened 100 branches in foreign jurisdictions as of February, 2013

Increasing mobile penetration, coupled with higher smartphone adoption has led an uptrend in mobile banking. Number of transactions through mobile banking witnessed a jump of 64 per cent in the April-December 2012 period, according to data from the RBI

Banks in India are highly alert in grabbing opportunities to increase transaction volumes in their automated teller machines (ATMs) through religious gatherings in the country. Private sector banks have introduced mobile ATMs that migrate from one religious fair to another throughout the year. For instance, HDFC Bank, the second largest private lender in the country, had sent its mobile ATM to the Maha Kumbh Mela-2013 in Allahabad. Over 100 million people are estimated to have attended this fair and the bank has noticed that the transaction volumes were phenomenal. Similarly, Kerala-based Federal Bank stationed a couple of portable ATMs near Sabarimala temple during the last festival season when thousands of devotees visited the place

The US\$ 4 billion- media conglomerate - Essel Group has forayed into the Indian financial services sector. It has set up two businesses, private equity (PE) and investment banking, under the names of Essel Finance Managers and CAPSTAR, respectively, under the holding company, Essel Financial Services. CAPSTAR, to focus on deals in infrastructure, real estate and financial services, has set up an office each in Mumbai, Noida, Bangalore and Delhi and will open one each in Chennai and Pune. The firm will focus on mergers and acquisitions (M&A), pre-Initial Public Offering (IPO) deals, qualified institutional placements (QIPs) and portfolio management services

France-based multinational bank Societe Generale has recently opened its third corporate banking branch at Sanand, near Ahmedabad in Gujarat. It already has branches in Mumbai and Delhi. Believing that Gujarat is one of the robust places in India and will provide good opportunities for bank to expand its base in the country, the Bank will provide all-types of financing, both short-term working

capital lines and medium-long term equipment or project finance, in Indian as well as foreign currencies. It will also provide other specialised advisory and financing activities like M&A, project finance, equipment and commodities financing to its clients. The Bank will expand in Bangalore, Chennai, Hyderabad and Pune by 2016

Health care Sector

The Indian healthcare industry, which comprises hospitals, medical infrastructure, medical devices, clinical trials, outsourcing, telemedicine, health insurance and medical equipment, was valued at US\$ 79 billion in 2012. The favourable demographic virtues offer an attractive market for healthcare providers and investors in India. The Indian healthcare providers plan to spend Rs 5,700 crore (US\$ 986.16 million) on IT products and services in 2013, a 7 per cent rise over 2012 revenues of Rs 5,300 crore (US\$ 916.96 million), as per a report by Gartner. The growth of the Indian healthcare sector is further driven by the 300 million strong middle class population with significant disposable income, which is likely to demand superior healthcare services.

The hospital and diagnostics centre in India received foreign direct investment (FDI) worth US\$ 1,597.33 million, while drugs & pharmaceutical and medical & surgical appliances industry registered FDI worth US\$ 10,318.17 million and US\$ 622.99 million, respectively during April 2000 to March 2013, according to data provided by Department of Industrial Policy and Promotion (DIPP).

The diagnostics sector in India has been witnessing immense progress in innovative competencies and credibility. In addition, the emerging sectors, such as bio-generics and pharma packaging are also paving way for the pharmaceutical market to continue its upward trend during FY 2012- FY 2014.

Despite this growth, according the data in the Economic Survey (2013), India spends around 4.1% of GDP on health, while China and Russia, that are among

the low spenders among the 11 countries identified in the government document, spending at least a percentage point more. Only Indonesia has a poorer allocation (2.6%) among the 11 countries, while Brazil and South Africa are near the 9% range. This makes India the worst performer among the BRICS group.

1.5 CHAPTERISATION

The structure of the study has been organised into five chapters. Chapter I gives a detail account of the corporate sector performance in India after economic reforms initiated in 1991. This chapter also provides an overview of various phases of economic growth in India. Moreover, it also delineates the various theories on firm and finally it gives chapterisation of the dissertation.

Chapter 2 provides the relevant existing literature pertaining to corporate performance. An in depth analysis of earlier literature lends proper shape to research, helps avoid duplication and pitfalls experienced by researchers working in similar area. This chapter gives the summary of literature review along with research gaps.

Chapter 3 set objectives of the study. This chapter also explains the data sources and methodology followed in this research. The present study uses secondary data on four sectors viz. Health Care (HC), Banking (B), Fast Moving Consumer Goods (FMCG) and Information Technology (IT).

Chapter 4 deals with data analysis and discussion of results. Descriptive statistics of all four sectors selected for the study is done with a view to gauge an insight into these sectors. Results of trend in sales and profit are also discussed in detail. Finally, results of panel data estimation are discussed in this chapter. Finally,

Chapter 5 illustrates the conclusion, summary and findings, realisation of objectives. In the light of results, this chapter also discusses the implications of the study. It also explains the limitations and future scope of this research.

CHAPTER 2

LITERATURE REVIEW

A detailed review of literature is essential to gain an insight into the concept of corporate performance and the scenario prevalent in India.

The review of literature has been classified in to two segments, the first section covers the concept of corporate performance the second section covers the corporate sector scenario in India.

2.1 CORPORATE PERFORMANCE: GLOBAL SCENARIO

Gallizo and Salvador (2003) carried out a study on financial ratios of U.S manufacturing firms for a period of eight years since 1993 to 2000 to understand the behavior and adjustment process of the same. A proper balance between sales and assets generally specify that the assets are managed and utilised well towards the sales generation. The main aim of the company is to maximise its profit and profitability ratios helps to measure overall performance and efficiency of the firm.

Wei (2005) analysed the difference in FDI performance of China and India. Random-Effect Models (REM) were used to estimate the determinants of FDI inflows in China and India. Then an econometric Oaxaca-Blinder decomposition method was used to quantify the contribution of these country-specific characteristics in explaining the gap. Instead of using FDI data reported by China and India authorities, he used the data on FDI from International Direct Investment Statistical Yearbook 2003 (Organisation for Economic Co-operation and Development (OECD), 2003). The study period was from 1987 to 2000, of 15 OECD countries. The analyses suggested that China's potentially huge domestic

market and higher international trade ties with OECD countries are the major determinant of its inward FDI. While for India, both domestic market and cheap labor cost, lower country risk, geographic closeness to OECD countries, and cultural similarity are important determinants of its inward FDI.

Raheman and Nasr (2007) carried on a research on profitability and working capital management of the Pakistani firms for the period 1999-2004. They applied regression analysis to explore the relationship between working capital variables and profitability indicators. The result showed a negative relationship between working capital and profitability due to liquidity-profitability tangle.

Snowden and Munoz, (2012) researched about stock market opening and Investment Finance in India since liberalisation. The focus of their study was on the role of equity prices and financing in the investment spending decisions of a large sample of Indian firms. To assess the relevance to investment spending of the variables identified above, panel estimation is applied to a Prowess- derived sample of manufacturing firms that recorded a figure for capital employed in both 1998 and 2007. The intention was to include only firms that had at least 10 years of continuing existence. They suggested the need for fixed effects estimation if firm-specific effects are not to dominate the results. The Hausman test confirmed the appropriateness of the fixed effects model in the equations that were reported. Year wise fixed effects were also included to absorb the influence of unobserved common developments. The study suggests that equity and debt markets should be developed together, rather than being seen as alternative vehicles for the financing of capital formation.

Gunasekaran, Indhumathi and Selvam, (2011) analyse the financial performance of both acquirer and target companies listed in BSE in the pre- and post-merger period. Out of the 93 companies which underwent mergers from April 2002 to March 2005 in Bombay Stock Exchange. Only 13 companies were selected, and all the required data for analysis was available in the PROWESS. They belonged

to the same industry. In order to study the financial performance of acquirer and target companies, ratios like liquidity ratio; leverage ratio; activity ratio; profitability ratio and t-test were used. The analysis of this study, supports that the acquirer companies always benefited more, than the target companies in the merger event.

2.2 CORPORATE PERFORMANCE: INDIAN SCENARIO

Reddy, (2007) examined whether Economic Value Added (EVA), has got a better predictive power relative to the traditional accounting measures such as EPS, ROCE, RONW, FCF, Capital Productivity (Kp) and labor Productivity (Lp). The data was collected on several variables from CMIE Prowess database and few others were calculated from the CMIE variables. The time span of the data was 1994-2006. Finally the data resulted in 6000 company years (on 1000 companies for 6 years 2001-2006). The Objectives was to make an empirical analysis, to examine whether EVA has more predictive power, relative to the five traditional measures. In the Methodology, regression models were run to investigate the strength of relationship between the market value and each of the independent variables. In the results of the study he was surprised that none of the traditional independent variables were found to be explaining any variation in the market value added. EVA emerged as the best predictor by explaining 44% of the variation in MVA. When a t-test was formed to examine the significance of the regression models, except EVA none of the variables had any significance even at 15% level. Thus the conclusion was that the EVA is the better predictor of market value, compared to other accounting measures.

Adidam, Banerjee, and Shukla, (2011) in their study addresses the following questions: Do Competitive Intelligence (CI) activities have a relationship with market performance and its drivers, its activities, its usage and its dissemination of CI information taking place within Indian firms? The objective and mission of CI was to better prepare the user to identify opportunities and pre-empt threats in the external environment. They developed a stratified sample that was procured

from CII and FICCI, based on industry, ownership structure, and size. The questionnaire was then mailed, along with a covering letter, to 500 firms. They received 202 responses, of which 145 were usable, for a response rate of 29 percent, which is similar to other CI surveys (Wright et al., 2002; Subramanian and IsHak, 1998). While there was a diversity of results, an overwhelming – conclusion that could unavoidably be drawn is that, there is an immense need for advanced CI practices in Indian firms.

Jain and Ahuja, (2012) evaluated the contributions of ISO 9000 initiatives towards improving manufacturing performance in India. For this 96 manufacturing organisations had been, extensively surveyed. The correlations between various ISO 9000 implementation issues and manufacturing performance improvements have been evaluated and validated by employing various statistical tools. The findings suggest that effective ISO 9000 initiatives can significantly contribute towards realisation of strategic manufacturing performance improvements for competing in the highly dynamic global marketplace.

Kumar, (2009) analysed the the post-merger operating performance of acquiring companies involved in merger activities during the period 1999-2002 in India. The main source of data in this study was from the Centre for Monitoring Indian Economy (CMIE). The sample period was from 1999 to 2002 and 30 merger events were considered. The data of each company included in the sample and industry set for the entire window (-3, +3) years were taken from Prowess, CMIE. The purpose of this study was to determine whether the acquiring firms, as per general beliefs and expectations, show better performance in the post-merger period. This paper used the operating performance approach using accounting data to examine merger related gains to the acquiring firms. This study concluded that post-merger profitability, assets turnover and solvency of the acquiring companies, on average, show no improvement when compared with pre-merger values.

Pani (2008). attempts to explore dividend policy and stock price behaviour in Indian Corporate Sector. This paper attempts to explore the possible links between dividend policy and stock price behaviour in Indian corporate sector. A sample of 500 listed companies across six different industries namely electricity, food and beverage, mining, non-metallic, textile and service sector from BSE were examined, from the years 1996-2006. His objective was to help understand the intricacies of dividend policy and stock-return behaviour in Indian corporate sector. The paper features a panel data approach to analyse the relationship between dividend-retention ratio and stock-price behaviour. The results are based on the fixed-effect model, as these perform statistically better than random effects and pooled OLS model. He concluded that dividends have an impact on the stock-return in Indian corporate sector, which is industry specific and the dividend retention ratio is positively related with the stock-returns.

Srinivasan (2012) examines the determinants of equity share prices in India. He examines the impact of fundamental factors (book value per share, dividend per share, earning per share, price earnings ratio, and size) on stock prices/equity prices of Indian companies in the context of Indian stock market. focusing on six major sectors of the Indian economy namely, Heavy and Manufacturing, Pharmaceutical, Energy, IT and ITES, Infrastructure and Banking. The study uses panel data consisting of annual time series data over the period 2006-2011 and cross-section data pertaining to the 6 major sectors of the Indian economy. The necessary information for empirical analysis was obtained from the PROWESS online data base provided by the Center for Monitoring Indian Economy (CMIE). Under the panel data, the fixed effects model as well as the random effects model had been used to explore the fundamental determinants of share price of different industry groups in India due to the fact that FEM takes into the firm specific effect and the REM consider the time effect. The findings indicate that size is being a significant factor in determining the share prices of all sectors under consideration except manufacturing. Moreover, the book value per share

positively influences the share prices of pharmaceutical, energy, IT and ITES and Infrastructure.

Sarkar and Sarkar (2008) try to estimate the relationship between multiple directorships by both inside and outside directors and company performance with special focus on whether business group affiliation matters in this relationship. They also investigate whether multiple directorships over-commits a director and hampers his/her ability to discharge important directorial duties. The objective of this paper was to contribute to the existing literature on multiple directorships by providing additional evidence on the “busyness hypothesis,” but with respect to an emerging economy, India. In their methodology, they analysed the relationship between firm performance and board busyness by estimating a spline regression. That is by setting alternative spline nodes, for median directorships, by directors, and estimating the corresponding regressions. Thus their non-linear relationship, determines endogenously, as to what constitutes a busy board. The data for their analysis was obtained from the Prowess database created by the Center for Monitoring the Indian economy (CMIE) and pertains to the financial year 2003. They Concluded that, multiple directorships provide higher oversight and that they are better and more efficient directors because with multiple appointments they add value to companies by being more knowledgeable, experienced and networked - characteristics which they acquire by sitting on several other boards.

Majumdar (2012) did a panel data analysis on the determinants of indebtedness in unlisted manufacturing firms in India. The case of unlisted manufacturing firms still remains largely unexplored. His objective was, to determine the borrowing behavior of these firms or whether there is a ‘pecking-order’ of borrowing among alternative sources. This paper attempted to address these issues and fill up this gap in existing literature on indebtedness in India. He employed panel regression model for analysis as follows: $Y_{it} = \alpha_i + \beta X_{it} + \epsilon_{it}$. The Likelihood Ratio, Lagrange Multiplier, Hausman specification, F-Statistic, R-squared, sign of coefficients were used to analyse the hypothesis made. Coefficients of the regression was used

using industry dummies in explaining borrowing behavior. The financial data was obtained from the database PROWESS of the CMIE. Study included only unlisted manufacturing firms in India from the period 2006 to 2010. The sample size stood at 864 firms, resulting in 3456 firm-year observations. The findings suggested that, total indebtedness is lower in unlisted manufacturing firms compared to their listed counterparts, and the difference is more pronounced in long-term borrowing ratio compared to short-term borrowing ratio.

Athukorala & Sen (2004) investigated the determinants of private saving in India. This paper has investigated the determinants of private saving in a developing country, using India as a case study. The purpose of this paper was to examine the determinants of the private saving rate in India during 1954–98. The framework for their analysis was derived from the life-cycle model (LCM) that has been the standard theory for the explanation of changes in private saving over time and across countries. The data series had been directly obtained or compiled from the Central Statistical Organisation (CSO), National accounts statistics, (various issues); Economic Survey (various issues) and Reserve Bank of India, Monthly bulletin and Report on Currency and Banking including SBI (various issues). The rate of inflation is measured using the GDP deflator. The econometric evidence reported in this paper points to the real interest rate, growth and the level of per capita income, spread of banking facilities, and the rate of inflation as statistically significant, positively influencing on domestic saving.

Chaudhuri, Schneider, and Chattopadhyay (2005) did an empirical investigation about the size and development of the shadow economy from states of India. Here they try to estimate the size of the hidden (shadow) economy in fourteen major states of India, over the period 1974-75 to 1995-96. They used a multiple indicator multiple cause (MIMIC) model. The variables that they consider, partitioned into two major categories: (1) data on the indicator variables (Grstdp and Temp) and (2) data on cause variables. They concluded that, on an average, the size has grown from 13.1% to 26.3%. Their result also provides evidence in favor

of liberalisation of the Indian economy that has resulted in the reduction of growth in the size of the hidden economy.

Jangili and Kumar, (2010) studied the determinants of private corporate sector investment in India. . This is a study of investment by firms in the private corporate sector in India. Where decisions regarding external finance, the role of demand, financial factors and macro economic conditions are considered in the analysis. In their methodology, they computed Hausman statistic and the result was 11.58 indicating that the null hypothesis could not be rejected at the 5 per cent level of significance. Hence, random effects model was used in their empirical analysis. The sample under study is a balanced panel on 897 firms having 8073 observations for 2000-01 to 2008-09, from Company Finances Studies of the RBI. They concluded that, firm specific factors such as firm size, dividend payout ratio, effective cost of borrowing, cash flow ratio and growth in value of production appear to be the major determinants of corporate investment decisions.

2.3 GAPS IN REVIEW OF LITERATURE

As is evident from the review of literature, there are different studies covering different dimensions of Corporate Performance, but there are still a lot of uncovered issues. Hence, there is enough scope for research in this area. The present study tries to estimate corporate performance from panel data using income method and expenditure method. The Study tries to improve upon the previously used methodology.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

In this study, an attempt is made to study the performance of the corporate sector in India. In this context, the theory of firm posits that profit is the guiding and motivating factor behind any productive activities in corporate sector. Profit is the most important factor determining corporate activities, however, in recent years, sales maximisation and share holder's wealth maximisation have also attracted attentions of the corporate activities. To study the corporate performance in India, the study has identified the relevant variables, data sources and appropriate techniques to analyse the data. In this chapter, we will discuss the objectives of the study, data and its sources and variables and the statistical methods to analyse the data for the objectives set in this study.

3.2 RESEARCH DESIGN

To study the corporate performance of India, we defined sample universe as listed companies of India, listed on Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). Thus, unlisted companies were out of the scope of the study. In listed companies on BSE and NSE are generally categorised into various sectors or industries such as automobile, pharmaceutical, banking, IT, FMCG, etc.

For the purpose of our study, we selected four sectors or verticals namely, IT, Infrastructure, Health Care and FMCG. The reason for selecting these verticals was that these are well known and prominent sectors of the economy and these companies in general torch bearers of growth of Indian economy in last two decades.

Next, we selected four companies from each sector to assess the performance of the corporate sector in India. The four companies selected from the IT sector were:

- Infosys
- TCS
- HCL
- Tech Mahindra

These companies of IT sector in India were the top companies and to assess the performance of the IT sector in India, they are the appropriate sample points.

From the Infra sector, the following four companies were selected for analysis:

- L & T
- BHEL
- Adani Ports
- Siemens

In our Infra sample, one is from public sector and three are from private sector. These Companies have dominant presence in Indian Infra sector. The following companies were selected from the fast moving consumer goods (FMCG):

- Marico
- Godrej Consumer
- Colgate
- Dabur India

From health sector, the following companies were selected for the study:

- Sun Pharma
- Dr. Reddy's Laboratories
- Lupin
- Cipla

Thus, we selected four companies from four sectors to analyse the performance of the corporate sector in India.

3.3 OBJECTIVES OF THE STUDY

The following are the objectives of the study

1. To describe the performance of selected companies in four verticals, namely, Information Technology (IT), Health care sector, Infrastructure and Fast Moving Consumer Goods (FMCG).
2. To find the trends in corporate performance.
3. To study the factors determining the performance of the corporate sector in India.

3.4 DATA AND VARIABLES

To study the performance of the corporate sector in India, we collected data on four companies from four sectors for ten years from 2003 to 2012. There are different types of data that are generally available for empirical analysis, namely, time series, cross section, and panel.

Time Series

In time series data we observe the values of one or more variables, over a period of time (e.g., GDP for several quarters or years).

Cross- Section Data

In cross-section data, values of one or more variables, are collected for several sample units, or entities, at the same point in time (e.g., crime rates for 15 states in India for a given year).

Panel Data

In panel data the same cross-sectional unit (say a family or a firm or a state) is surveyed over time. In short, panel data have space as well as time dimensions. There are other names for panel data such as pooled data (pooling of time series and cross-sectional observations), combination of time series and cross-section data, micropanel data, longitudinal data (a study over time of a variable or group of subjects), event history analysis (e.g., studying the movement over time of

subjects through successive states or conditions), cohort analysis (e.g., following the career path of 1995 graduates of a business school). Although there are subtle variations, all these names essentially represent movement over time of cross-sectional units.

In this study, we collected data on four companies from four sectors, namely, IT, Infrastructure, Health Care and FMCG for the period 2003 to 2012. Thus, our data set is basically panel data, and panel data estimation will be used for analysis.

To analyse the performance of the corporate sector, we collected data on the following variables on these four companies for ten years. The variables were:

- Net Profit
- Sales Turnover
- Total Assets
- Debt -Equity Ratio

We collected annual data on the above variables to analyse the corporate performance in India from Prowess Database.

3.5 HYPOTHESES

The objectives of the study were reduced in testable form called hypothesis which is an assumption regarding population parameter.

1. The first hypothesis of the study is:

H_0 : There is no relation between net profit and sales turnover

H_1 : There is relation between net profit and sales turnover

2. The second hypothesis is:

H_0 : There is no relation between net profit and total assets

H_1 : There is relation between net profit and total assets

3. The third hypothesis which will be tested in the study is:

H_0 : There is positive relation between net profit and risk

H_1 : There is negative relation between net profit and risk

3.6 RESEARCH METHODS

To study the first objective of the study, we will use descriptive statistics for describing the corporate performance sector wise over the last ten years. Under descriptive statistics, we will use bar chart, line graph and pie chart for summarising data graphically. We will also summarise numerically the four variables namely, net profit, sales turnover, total assets and debt –equity ratio using arithmetic mean, range, standard deviation and other descriptive statistics.

As a first step to study relationship between net profit and sales turnover, net profit and total assets and net profit and risk as proxy by debt-equity ratio, we will use correlation analysis to find whether there is significant relation exists between these variables or not.

3.6.1 Correlation Technique

Correlation is one of the most widely used statistics in quantitative analysis. Correlation is perhaps the starting point in measuring association between two variables. The concept of correlation first propounded by the French astronomer *Bravais*, however correlation technique in graphical form was first devised by *Sir Francis Galton*. In the year, 1896, Karl Pearson came up with coefficient of correlation method. According to L.R. Connor, “If two or more quantities vary in sympathy so that movements in the one tend to be accompanied by corresponding movements in the other, then they are said to be correlated.”

The significance of correlation technique in economic and business world very aptly put by *W.A. Neiswanger*, “Correlation analysis contributes to the understanding of economic behavior, aids in locating critically important variables on which others depend, may reveal to the economist the connections by which disturbances spread and suggest to him the paths through which stabilising forces may become effective.” Thus, correlation is very important technique for studying inter-relationships among economic variables.

The degree or extent of relationship between two or more variables is an important notion which helps in taking clue from one variable to predict the movement in another variable. When the extent of relationship between two variables is studied, it is called simple correlation. When we are studying degree of relationship between more than two variables, it is called multiple correlation.

There are basically three types of correlation.

Positive Correlation: When the two variables tend to move in the same direction, there exists a positive correlation between them. In other words, both the variables tend to increase or decrease together.

Negative Correlation: When the two variables tend to move in the opposite direction, there exists a negative correlation. For instance, when price increases quantity demanded declines and vice versa.

Zero Correlation: When two variables tend to move with no relation with each other, they are considered to be uncorrelated. For example, one can expect zero correlation between crop yield and height of the farmers.

3.6.1.1 Karl Pearson Coefficient of Correlation

To quantify the degree of relationship between two variables, coefficient of correlation is used. It is denoted by small 'r' which always lies between -1 and 1. To arrive at numerical value of relationship between inflation and gold prices, Pearson coefficient of correlation can be calculated. The formula for computing coefficient of correlation, r, is:

$$r = \frac{\sum (X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum (X - \bar{X})^2} \sqrt{\sum (Y - \bar{Y})^2}}$$

3.6.1.2 Analysis of Variance (ANOVA)

Analysis of variance is an important statistical technique used to test the hypothesis that the means of two or more populations are equal. In case of more than two means, one can also use t-test for comparing means but the chances of type I error increases. To avoid this situation, in case of more than two population means, the appropriate test for testing equality of two or more means is analysis of variance. R. Fisher, the father of statistics, developed a technique called 'experimental design' to establish cause and effect relationship between variables. In fact, ANOVA is an important part of a large 'experimental design' setup.

Essentially in ANOVA, we have a dependent variable which is quantitative in nature and one or more independent variables which are categorical in nature. The independent variables which are categorical variables are also called **factors**. Combination of factors or categories is called **treatment**. When there is a single independent variable or a single factor, it is called **one-way ANOVA**. If there are two or more factors it is termed as **n-way ANOVA**.

3.7 One-Way ANOVA

In one-way ANOVA, we have one dependent variable and one categorical independent variable. The idea is to find how much variation in dependent variable is explained by categorical independent variable and how much variation is not accounted by this independent variable. In fact, we will try to decompose total variation in dependent variable (Y) into variation explained by categorical independent variable (X) and variation not explained by X, that is, error. SS_Y is the total variation in Y. SS_X is the variation in Y that is due to the variations in the means of groups of X. SS_{Error} is the variation in Y that is linked with variation within each category of X.

The total variation in dependent(Y), denoted by SS_Y , is decomposed into:

$$SS_Y = SS_X + SS_{\text{Error}}$$

Where

$$SS_Y = \sum_{i=1}^N (Y_i - \bar{Y})^2$$

$$SS_X = \sum_{j=1}^c n(\bar{Y}_j - \bar{Y})^2$$

$$SS_{Error} = \sum_j^c \sum_i^n (Y_{ij} - \bar{Y}_j)^2$$

Y_i = individual observation

\bar{Y}_j = average for category j

\bar{Y} = Grand mean

Y_{ij} = ith observation in jth category

In analysis of variance, the aim is to test the null hypothesis that the means of two or more population are equal. In other words, our null and the alternate hypotheses are:

$$H_0 : \mu_1 = \mu_2 = \mu_3 = \dots = \mu_n$$

H_1 : *at least one mean is different*

The above hypothesis is tested by the F statistic with (c-1) and (N-c) degrees of freedom in the numerator and denominator respectively. The F statistic is given by the following formula:

$$F = \frac{\frac{SS_X}{(c-1)}}{\frac{SS_{Error}}{(N-c)}}$$

The rule is when the calculated value of F is greater than critical F value reject the null hypothesis.

3.8 PANEL DATA REGRESSION MODEL

For the third objectives of our study, we will use panel data regression as we have collected data which have features of both cross and time series data. To explain the corporate performance in India we have selected four variables, namely, net profit, sales turnover, total assets and debt-equity ratio. Here, the dependent

variable is net profit and we are trying to explain the net profit in terms of sales turnover, total assets and debt-equity ratio. Thus, the panel regression model for the above data is as follows:

$$Y_{it} = \beta_1 + \beta_2 X_{1it} + \beta_3 X_{2it} + \beta_4 X_{3it} + u_{it}$$

$Y = \text{Net Profit}$

$X_1 = \text{Sales Turnover}$

$X_2 = \text{Total Assets}$

$X_3 = \text{Debt-Equity Ratio}$

$i = 1, 2, 3, 4$

$t = 1, 2, \dots, 10$

where i stands for the i^{th} cross-sectional unit and t for the t^{th} time period. As a matter of convention, we will let i denote the cross-section identifier and t the time identifier. It is assumed that there are a maximum of N cross sectional units or observations and a maximum of T time periods. If each cross-sectional unit has the same number of time series observations, then such a panel (data) is called a balanced panel. In the present example we have a balanced panel, as each company in the sample has 10 observations. If the number of observations differs among panel members, we call such a panel an unbalanced panel.

There are certain benefits of using panel data estimation. Since panel data relate to individuals, firms, states, countries, etc., over time, there is bound to be heterogeneity (dissimilar elements or units that are not homogeneous) in these units. The techniques of panel data estimation can take such heterogeneity explicitly into account by allowing for individual-specific variables, as we shall show shortly. We use the term *individual* in a generic sense to include micro-units such as individuals, firms, states, and countries.

Secondly, by combining time series of cross-section observations, panel data give more informative data, more variability (the quality of being uneven and lacking uniformity), less collinearity (Passing through or lying on the same straight line) among variables, more degrees of freedom and more efficiency.

By studying the repeated cross section of observations, panel data are better suited to study the *dynamics of change*. Spells of unemployment, job turnover, and labor mobility are better studied with panel data. Panel data can better detect and measure effects that simply cannot be observed in pure cross-section or pure time series data. For example, the effects of minimum wage laws on employment and earnings can be better studied if we include successive waves of minimum wage increases in the central and/or state minimum wages. Panel data enables us to study more complicated behavioral models. For example, phenomena such as economies of scale and technological change can be better handled by panel data than by pure cross-section or pure time series data. By making data available for several thousand units, panel data can minimise the bias that might result if we aggregate individuals or firms into broad aggregates. Thus, panel data can enrich empirical analysis in ways that may not be possible if we use only cross-section or time series data.

3.8.1 Fixed Effect Panel Regression Model

The fixed effects model for some variable y_{it} may be written as:

$$y_{it} = \alpha + \beta x_{it} + \mu_i + v_{it}$$

We can think of μ_i as encapsulating all of the variables that affect y_{it} cross-sectionally but do not vary over time. This model could be estimated using dummy variables, which would be termed the least squares dummy variable (LSDV) approach. We would write this as

$$y_{it} = \alpha + \beta x_{it} + \mu_1 D1_i + \mu_2 D2_i + \mu_3 D3_i + \dots + \mu_N DN_i + v_{it}$$

where $D1_i$ is a dummy variable that takes the value 1 for all observations on the first entity (e.g., the first firm) in the sample and zero otherwise, $D2_i$ is a dummy variable that takes the value 1 for all observations on the second entity (e.g., the

second firm) and zero otherwise, and so on. As it is written in the second of these two equations, this is now just a standard regression model and therefore it can be estimated using OLS.

An alternative to the fixed effects model described above is the random effects model, which is sometimes also known as the error components model. As with fixed effects, the random effects approach proposes different intercept terms for each entity and again these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be the same both cross-sectionally and temporally.

However, the difference is that under the random effects model, the intercepts for each cross-sectional unit are assumed to arise from a common intercept α (which is the same for all cross-sectional units and over time), plus a random variable ε_i that varies cross-sectionally but is constant over time. ε_i measures the random deviation of each entity's intercept term from the 'global' intercept term α . We can write the random effects panel model as

$$y_{it} = \alpha + \beta x_{it} + \omega_{it} \quad , \quad \omega_{it} = \varepsilon_i + v_{it}$$

where x_{it} is still a vector of explanatory variables, but here the heterogeneity (variation) in the cross-sectional dimension occurs via the ε_i terms. Note that this framework requires the assumptions that the new cross-sectional error term, ε_i , has zero mean, is independent of the individual observation error term, v_{it} , has constant variance and is independent of the explanatory variables.

It is often said that the random effects model is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a fixed effect model is more plausible when the entities in the sample effectively constitute the entire population. However, the random effects approach has a major drawback which arises from the fact that it is valid only

when the composite error term, ω_{it} , is uncorrelated with all of the explanatory variables. The assumption is more stringent than the corresponding one in the fixed effects case, because with random effects we thus require both ε_i and v_{it} to be independent of all of the x_{it} . This can also be viewed as a consideration of whether any unobserved omitted variables are uncorrelated with the included explanatory variables. If they are uncorrelated, a random effects approach can be used; otherwise the fixed effects model is preferable. In this study, fixed effect panel data regression is used for analysis.

Chapter 4

Data Analysis and Discussion of Results

4.1 INTRODUCTION

In this study, an attempt is made to explain corporate performance in India in terms of certain selected relevant variables. For examining the various factors that affect profitability of corporate sector in India, the present study consider net profit as dependent variable. Profit is a positive residual income that an entrepreneur gets when he deducts from his total revenue of the business total costs. Profit may be defined as the difference between firm's total revenue and its total costs.

Concepts of Profit

Profit in simple words is the difference between total revenue and total cost. However, profit sometimes defined as a reward for making innovations, a reward for accepting risk and uncertainties and market imperfections. Thus, profit emerges due to risk bearing ability of the entrepreneur.

There are two types of profit, namely, gross profit and net profit.

Gross Profit

In common parlance the term profit refers to business profit or gross profit. The difference between total revenue of a firm and its explicit costs is called gross profit or business profit.

Gross Profit = Total Revenue – Explicit Costs

Net Profit

By profit in economics is meant net profit. It is also called economic or pure profit. It is calculated by deducting implicit costs, depreciation charges, insurance charges etc, from gross profit.

The various independent variables used in this study are:

Sales Turnover is one of the important variables used in this study. Sales turnover is the simply the quantity sold multiplied with per unit price at which goods are sold. Total Assets is another independent variable used in the study, which is a proxy for size of the firm. Debt equity ratio is also used as independent variable, which is a measure of risk taken by a firm. Return on assets is a measure for return on assets on a company. For listed companies, there may be pressure from shareholders to perform and show some desirable level of return on capital or assets.

4.2 EMPIRICAL RESULTS

Descriptive Statistics

First in this section, we will try to delineate the trend in sales and other variables shown in table for IT sector in India. The following table shows sales turnover, total assets, profit, debt/equity ratio and return on assets of TCS.

Table 4.1: Sales turnover, Total Assets and Profit of TCS during 2008 to 2012

Year	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
2012	38,858.79	24,952.86	10,975.98	0.01	55.31
2011	29,275.68	19,620.61	7,569.99	0.01	44.38
2010	23,044.84	15,152.36	5,618.51	0.01	42.46
2009	22,404.00	13,486.62	4,696.21	0.01	43.27
2008	18,536.55	11,023.06	4,508.76	0.01	42.92

Table 4.1 shows that sales turnover of TCS was Rs. 18,536.55 crores in 2008 which increased to Rs. 29,275.68 crores in 2011 and 38,858.79 crores in 2012. Thus, sales turnover shows a steady upward trend in sales turnover of TCS. Total

asset of the company has almost doubled in 5 years time. The assets of TCS which was around Rs. 11023.06 crores in 2008 became 24952.86 crores in 2012. Likewise, profit of TCS, which was Rs.4508.76 crores, became 10,975.98 crores in 2012. Thus, profit of TCS also reflects that it has become double during the last years. Debt equity ratio of TCS is at a very low level of 0.01 which remain constant over the last five years. ROAA has been remained above 40 per cent over the last five years.

Table 4.2: Summary Statistics of TCS

<i>Summary Statistics</i>	<i>Sales turnover</i>	<i>Total Assets</i>	<i>Profit</i>	<i>d/e ratio</i>	<i>ROAA</i>
Mean	26423.97	16847.102	6673.89	0.01	45.668
Median	23044.84	15152.36	5618.51	0.01	43.27
Standard Deviation	7945.865	5510.900886	2693.687	0	5.4364
Sample Variance	63136768	30370028.58	7255952	0	29.5550
Kurtosis	0.854411	-0.32602204	1.062491	#DIV/0!	4.65285
Skewness	1.12264	0.780585173	1.306417	#DIV/0!	2.14384
Range	20322.24	13929.8	6467.22	0	12.85

Table 4.2 shows that mean sales turnover of TCS over the last five years is Rs. 26,423.97 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 7,945.86 crores. Similarly, mean total assets of TCS is Rs. 16847.1 crores and standard deviation of total assets is Rs. 5510 crores. While mean profit of TCS during this period is Rs.6673.89 standard deviation of profit is 2693.68 crores. And, mean return on assets (ROAA) over the 45.66 per cent and standard deviation of ROAA 5.43 per cent.

Table 4.3: Sales turnover, Total Assets and Profit of Infosys during 2008 to 2012

Year	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
2012	31,254.00	29,757.00	8,470.00	0	37.02
2011	25,385.00	24,501.00	6,443.00	0	35.84
2010	21,140.00	22,036.00	5,803.00	0	33.69
2009	20,264.00	17,809.00	5,819.00	0	39.8
2008	15648.00	13,490.00	4,470.00	0	34.12

Table 4.3 shows that sales turnover of Infosys was Rs. 15,648 crores in 2008 which increased to Rs. 25385 crores in 2011 and 31254 crores in 2012. Thus, sales turnover shows a steady upward trend in sales turnover of Infosys. Total asset of the company has almost doubled in 5 years time. The assets of Infosys which was around Rs. 13490 crores in 2008 became 29757 crores in 2012. Likewise, profit of Infosys, which was Rs.4470 crores, became 8470 crores in 2012. Thus, profit of Infosys also reflects that it has become double during the last years. Debt equity ratio of Infosys is zero. Thus, Infosys is debt free company. ROAA has been remained above 30 per cent over the last five years for Infosys which is certainly lower than TCS over the sample period.

Table 4.4: Summary Statistics of Infosys

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	22738.2	21518.6	6201	0	36.094
Median	21140	22036	5819	0	35.84
Standard Deviation	5883.690271	6230.032046	1458.391	0	2.46639
Sample Variance	34617811.2	38813299.3	2126904	0	6.08308
Kurtosis	0.218535382	-0.507372194	1.818697	#DIV/0!	0.038268
Skewness	0.532776681	0.029736598	0.858399	#DIV/0!	0.835713
Range	15606	16267	4000	0	6.11

Table 4.4 shows that mean sales turnover of Infosys over the last five years is Rs. 22738.2 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 5883.69 crores. Similarly, mean total assets of Infosys is Rs. 21518.6 crores and standard deviation of total assets is Rs. 6230 crores. While mean profit of Infosys during this period is Rs.6201 standard deviation of profit is 1458.39 crores. And, mean return on assets (ROAA) over the 36.09 per cent and standard deviation of ROAA 2.46 per cent. Thus, mean ROAA of TCS is higher by almost 10 per cent than Infosys over the sample period.

Table 4.5: Sales turnover, Total Assets and Profit of Wipro during 2008 to 2012

Year	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
2012	31,803.40	29,595.70	4,685.10	0.22	21.41
2011	26,401.20	26,065.00	4,843.70	0.22	22.34
2010	23,006.30	23,222.40	4,898.00	0.31	23.06
2009	21,612.80	17,528.90	2,973.80	0.4	26.77
2008	17,658.10	15,433.10	3,063.30	0.33	23.33

Table 4.5 shows that sales turnover of Wipro was Rs. 17658.1 crores in 2008 which increased to Rs. 26401.2 crores in 2011 and 31803.4 crores in 2012. Thus, sales turnover shows a steady upward trend in sales turnover of Wipro also like TCS and Infosys. Total asset of the company has almost doubled in 5 years time. The assets of Wipro which was around Rs. 15433.1 crores in 2008 became 29595.7 crores in 2012. Likewise, profit of Wipro, which was Rs.3063.3 crores, became 4685.1 crores in 2012. Thus, profit of Wipro is somewhat not at par with TCS and Infosys which almost became double in five years. Debt equity ratio of Wipro varies between 0.22 and 0.4 which means roughly 25 per cent of company business is funded by debt over the last five years. ROAA of Wipro is around 20 per cent over the last five years which is almost half compared to TCS.

Table 4.6: Summary Statistics of Wipro

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	24096.36	22369.02	4092.78	0.296	23.382
Median	23006.3	23222.4	4685.1	0.31	23.06
Standard Deviation	5327.247082	5876.801368	984.2571295	0.077006493	2.034667
Sample Variance	28379561.47	34536794.32	968762.097	0.00593	4.13987
Kurtosis	0.247547233	-1.945216293	-3.268405977	-1.420820193	2.799446
Skewness	0.514113051	-0.038044817	-0.585047088	0.263660121	1.486743
Range	14145.3	14162.6	1924.2	0.18	5.36

Table 4.6 shows that mean sales turnover of Wipro over the last five years is Rs. 24096.36 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 5327.24 crores. Similarly, mean total assets of Wipro is

Rs. 22369.02 crores and standard deviation of total assets is Rs. 5876.8 crores. While mean profit of Wipro during this period is Rs.4092.78 standard deviation of profit is 984 crores. And, mean return on assets (ROAA) over the 23 per cent and standard deviation of ROAA 2.03 per cent. Thus, mean ROAA of TCS is higher by almost 20 per cent than Wipro over the sample period. Infosys and Wipro seem to be very similar companies in terms of size of the company, sales turnover, total assets and profit. However, ROAA of Infosys is 36 per cent, which is substantially higher than Wipro, which is only 23 per cent over the sample period.

Table 4.7:Sales turnover, Total Assets and Profit of HCL Tech during 2008 to 2012

Year	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
2012	8,907.22	7,305.45	1,950.42	0.11	33.64
2011	6,794.48	6,889.31	1,198.28	0.18	21.2
2010	5,078.76	6,333.25	1,056.58	0.21	20.44
2009	4,675.09	4,001.97	997.31	0.15	32.39
2008	4,615.39	3,240.16	780.65	0.01	33.08

Table 4.7 shows that sales turnover of HCL TECH was Rs. 4615.39 crores in 2008 which increased to Rs. 6794.48 crores in 2011 and 8907.22 crores in 2012. Thus, sales turnover shows a steady upward trend in sales turnover of HCL like TCS, Wipro and Infosys. Total asset of the company has become more than double in 5 years time. The assets of HCL which was around Rs. 3240.16 crores in 2008 became 7305.45 crores in 2012. Likewise, profit of HCL, which was Rs.780.65 crores, became 1950.42 crores in 2012. Thus, profit of HCL shows a tremendous almost three times jump in five years. Debt equity ratio of HCL varies between 0.01 and 0.11, which is not very high by any standard. ROAA of HCL is around 33 per cent over the last five years which is at par with Infosys but lower than TCS.

Table 4.8: Summary Statistics of HCL Tech

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	6014.19	5554.03	1196.65	0.13	28.15
Median	5078.76	6333.25	1056.58	0.15	32.39
Standard Deviation	1844.13	1818.00	447.38	0.08	6.71
Sample Variance	3400833.65	3305128.28	200145.98	0.01	45.04
Kurtosis	0.46	-2.57	3.07	1.11	-3.26
Skewness	1.24	-0.55	1.61	-1.10	-0.60
Range	4291.83	4065.29	1169.77	0.20	13.20

Table 4.8 shows that mean sales turnover of HCL Tech over the last five years is Rs. 6014.19 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 1844.13 crores. Similarly, mean total assets of HCL is Rs. 5554.03 crores and standard deviation of total assets is Rs. 1818. crores. While mean profit of HCL Tech during this period is Rs.1196.65 standard deviation of profit is 447.38 crores. And, mean return on assets (ROAA) over the 28 per cent and standard deviation of ROAA 6.71 per cent. Thus, mean ROAA of HCLTech is 28 per cent. However, one noticeable thing regarding HCL Tech is that standard deviation in ROAA is 6.71 per cent over the last five years.

Table 4.9: Summary Statistics of Sun Pharma

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	2643.686	6022.52	1299.024	0.028	24.504
Median	2427.35	5747.47	1265.29	0.03	26.69
Standard Deviation	886.908818	1478.99606	400.7491	0.008367	5.572408
Sample Variance	786607.2515	2187429.345	160599.9	7E-05	31.05173
Kurtosis	1.643024922	-0.210831551	1.128223	-0.61224	-1.6539
Skewness	1.344967638	0.556329009	1.057417	0.512241	-0.33759
Range	2189.33	3838.77	1029.33	0.02	13.73

Table 4.9 shows that mean sales turnover of Sun Pharma over the last five years is Rs. 2643.68crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 886.90 crores. Similarly, mean total assets of Sun Pharma is Rs. 6022.52 crores and standard deviation of total assets is Rs. 1478.99 crores.

While mean profit of Sun Pharma during this period is Rs.1299.02 standard deviation of profit is 400.74 crores. And, mean return on assets (ROAA) over the 24.50 per cent and standard deviation of ROAA 5.57 per cent. Thus, mean ROAA of Sun Pharma is 24.50 per cent. However, one noticeable thing regarding Sun Pharma is that standard deviation in ROAA is 5.57 per cent over the last five years.

Table 4.10: Dr. Reddy's Laboratory

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	4808.88	6673.46	734.00	0.16	14.66
Median	4469.60	6477.80	846.10	0.12	14.20
Standard Deviation	1290.84	1194.87	209.98	0.07	3.19
Sample Variance	1666268.57	1427714.03	44093.03	0.01	10.20
Kurtosis	0.59	-1.39	-2.48	-3.20	0.67
Skewness	0.91	0.30	-0.69	0.56	0.32
Range	3351.80	2976.91	455.18	0.14	8.67

Table 4.10 shows that mean sales turnover of Dr. Reddy's Laboratory over the last five years is Rs. 4808.88 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs.1290.84 crores. Similarly, mean total assets of Dr. Reddy's is Rs.6673.46 crores and standard deviation of total assets is Rs.1194.87 crores. While mean profit of Dr. Reddy's Laboratory during this period is Rs.734 standard deviation of profit is 209.98 crores. And, mean return on assets (ROAA) over the 14.66 per cent and standard deviation of ROAA 3.19 per cent. Thus, mean ROAA of Dr. Reddy's Laboratory is 14.66 per cent. However, one noticeable thing regarding Dr. Reddy's Laboratory is that standard deviation in ROAA is 3.19 per cent over the last five years.

Table 4.11: Summary Statistics of Lupin

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	3864.87	3380.64	624.72	0.48	23.31
Median	3723.96	3437.36	648.92	0.36	22.49
Standard Deviation	1124.98	1085.91	189.23	0.24	2.44
Sample Variance	1265583.43	1179190.20	35806.32	0.06	5.97
Kurtosis	-1.26	-2.31	-2.97	-2.66	4.10
Skewness	0.47	0.12	-0.17	0.63	1.98
Range	2753.79	2444.46	393.01	0.52	6.07

Table 4.11 shows that mean sales turnover of Lupin over the last five years is Rs.3864.87 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 1124.98 crores. Similarly, mean total assets of Lupin is Rs. 3380.64 crores and standard deviation of total assets is Rs.1085.91 crores. While mean profit of Lupin during this period is Rs624.72 standard deviation of profit is Rs.189.23 crores. And, mean return on assets (ROAA) over the 23.31 per cent and standard deviation of ROAA 2.44 per cent. Thus, mean ROAA of Lupin is 23.31 per cent. However, one noticeable thing regarding 23.31 Tech is that standard deviation in ROAA is 2.44 per cent over the last five years.

Table 4.12: Summary Statistics of Cipla

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	5737.984	6032.664	928.816	0.126	19.538
Median	5657.85	5919.16	960.39	0.12	18.74
Standard Deviation	1057.29417	1306.197105	185.201	0.06269	2.66739
Sample Variance	1117870.962	1706150.877	34299.42	0.00393	7.11497
Kurtosis	-0.260525693	-1.49465408	-2.47308	-0.06235	-2.14596
Skewness	-0.162039881	-0.120372718	-0.27861	0.833703	0.042956
Range	2780.78	3226.13	422.53	0.15	6.16

Table 4.12 shows that mean sales turnover of Cipla over the last five years is Rs. 5737.98 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 1057.29 crores. Similarly, mean total assets of Cipla is Rs.

6032.66 crores and standard deviation of total assets is Rs. 1306.19 crores. While mean profit of Cipla Tech during this period is Rs.928.81 standard deviation of profit is 185.20 crores. And, mean return on assets (ROAA) over the 19.53 per cent and standard deviation of ROAA 2.66 per cent. Thus, mean ROAA of Cipla is 19.53 per cent. However, one noticeable thing regarding Cipla is that standard deviation in ROAA is 2.66 per cent over the last five years.

Table 4.13: Summary Statistics of L&T

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	38924.57	24278.68	3688.998	0.4	23.874
Median	37187.5	25112.47	3957.89	0.38	23.67
Standard Deviation	10725.1	8549.172	931.7511	0.076158	1.764236
Sample Variance	1.15E+08	73088340	868160.1	0.0058	3.11253
Kurtosis	0.073081	-0.86903	1.705932	3.54132	1.635203
Skewness	0.274331	-0.09868	-1.38821	1.714907	1.280185
Range	28568.99	21979.72	2283.08	0.2	4.37

Table 4.13 shows that mean sales turnover of L&T over the last five years is Rs. 38924.57 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs.10725.1 crores. Similarly, mean total assets of L&T is Rs. 24278.68 crores and standard deviation of total assets is Rs.931.75 crores. While mean profit of L&T during this period is Rs.3688.99 standard deviation of profit is 8549.17 crores. And, mean return on assets (ROAA) over the 23.87 per cent and standard deviation of ROAA 1.76 per cent. Thus, mean ROAA of L&T is 23.87 per cent. However, one noticeable thing regarding 23.87 is that standard deviation in ROAA is 1.76 per cent over the last five years.

Table 4.14: Summary Statistics of BHEL

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	35831.33	17163.31	4671.87	0.01	40.88
Median	34613.43	16045.11	4310.64	0.01	41.37
Standard Deviation	11486.06	5849.41	1814.49	0.00	2.64
Sample Variance	131929504.94	34215583.17	3292380.05	0.00	6.97
Kurtosis	-1.56	-0.77	-2.12	#DIV/0!	1.47
Skewness	0.10	0.61	0.42	#DIV/0!	-0.50
Range	28485.21	14627.28	4180.62	0.00	7.30

Table 4.14 shows that mean sales turnover of BHEL over the last five years is Rs. 35831.33 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs.11486.06 crores. Similarly, mean total assets of BHEL is Rs. 17163.31 crores and standard deviation of total assets is Rs.5849.41 crores. While mean profit of BHEL during this period is Rs.4671.87 standard deviation of profit is 1814.49 crores. And, mean return on assets (ROAA) over the 40.88 per cent and standard deviation of ROAA 2.64 per cent. Thus, mean ROAA of BHEL is 40.88 per cent. However, one noticeable thing regarding BHEL is that standard deviation in ROAA is 2.64 per cent over the last five years.

Table of 4.15: Summary Statistics of Adani Ports

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	1544.36	6875.83	707.78	0.84	13.41
Standard Error	292.73	1021.68	173.67	0.05	0.84
Median	1395.39	6645.41	700.98	0.79	13.89
Standard Deviation	654.56	2284.55	388.33	0.11	1.88
Sample Variance	428452.38	5219181.89	150802.70	0.01	3.53
Kurtosis	-0.53	0.50	-1.51	-1.42	3.90
Skewness	0.62	0.88	-0.08	0.72	-1.93
Range	1665.08	5839.89	963.85	0.26	4.57

Table 4.15 shows that mean sales turnover of Adani Ports over the last five years is Rs.1566.36 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 654.56 crores. Similarly, mean total assets of Adani

Ports is Rs. 6875.83 crores and standard deviation of total assets is Rs.2284.55 crores. While mean profit of Adani Ports during this period is Rs.707.78 standard deviation of profit is 388.33 crores. And, mean return on assets (ROAA) over the 13.41 per cent and standard deviation of ROAA 1.88 per cent. Thus, mean ROAA of Adani Ports is 13.41 per cent. However, one noticeable thing regarding Adani Ports is that standard deviation in ROAA is 1.88 per cent over the last five years.

Table 4.16: Summary Statistics of Siemens

Summary Statistics	Sales	Total Assets	Profit	d/e ratio	ROAA
Mean	10480.94	3248.83	730.80	0.00	36.24
Standard Error	977.67	345.19	120.46	0.00	3.17
Median	9563.00	3478.00	827.21	0.00	38.01
Standard Deviation	2186.13	771.87	269.35	0.00	7.08
Sample Variance	4779178.79	595784.38	72548.52	0.00	50.14
Kurtosis	-2.57	0.13	-0.18	#DIV/0!	-1.91
Skewness	0.59	-1.01	-0.59	#DIV/0!	-0.53
Range	4685.63	1892.45	701.65	0.00	16.35

Table 4.16 shows that mean sales turnover of Siemens over the last five years is Rs. 10480.94 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 2186.13 crores. Similarly, mean total assets of Siemens is Rs. 3248.83 crores and standard deviation of total assets is Rs.771.87 crores. While mean profit of Siemens during this period is Rs.730.80 standard deviation of profit is 269.35 crores. And, mean return on assets (ROAA) over the 36.24 per cent and standard deviation of ROAA 7.08 per cent. Thus, mean ROAA of Siemens is 36.24 per cent. However, one noticeable thing regarding Siemens is that standard deviation in ROAA is 7.08 per cent over the last five years.

Table 4.17 : Summary Statistics of Dabur India

<i>Summary Statistics</i>	<i>Sales turnover</i>	<i>Total Assets</i>	<i>Profit</i>	<i>d/e ratio</i>	<i>ROAA</i>
Mean	2911.67	1041.73	411.66	0.16	52.37
Median	2891.00	877.17	433.33	0.19	47.98
Mode	#N/A	#N/A	#N/A	#N/A	#N/A
Standard Deviation	667.39	416.05	65.49	0.08	11.66
Sample Variance	445411.95	173098.46	4289.16	0.01	136.06
Kurtosis	-1.26	-1.57	-0.99	1.67	-2.22
Skewness	0.24	0.29	-0.81	-1.39	0.53
Range	1670.03	1031.56	154.64	0.20	27.07

Table 4.17 shows that mean sales turnover of Dabur India over the last five years is Rs.2911.67 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs.667.39 crores. Similarly, mean total assets of Dabur India is Rs. 1041.73 crores and standard deviation of total assets is Rs.46.05 crores. While mean profit of Dabur India during this period is Rs.411.66 standard deviation of profit is 65.49 crores. And, mean return on assets (ROAA) over the 52.37 per cent and standard deviation of ROAA 11.66 per cent. Thus, mean ROAA of Dabur India is 52.37 per cent. However, one noticeable thing regarding Dabur India is that standard deviation in ROAA is 11.66 per cent over the last five years.

Table 4.18: Summary Statistics of Godrej Consumer

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	1787.544	1258.474	319.426	0.25	36.852
Median	1301.58	839.87	248.12	0.12	32.65
Standard Deviation	949.898	1014.324	196.1539	0.361179	17.17082
Sample Variance	902306.3	1028854	38476.35	0.13045	294.837
Kurtosis	-1.86726	-0.5497	-1.00832	4.647298	3.314779
Skewness	0.754992	0.909486	0.847845	2.128587	1.686619
Range	2177.75	2476.34	456.27	0.88	44.61

Table 4.18 shows that mean sales turnover of Godrej Consumer over the last five years is Rs. 1787.54 crores. Deviation of sales turnover from the mean sales

turnover over the last five years is Rs.949.89 crores. Similarly, mean total assets of Godrej Consumer is Rs.1258.47 crores and standard deviation of total assets is Rs.1014.32 crores. While mean profit of Godrej Consumer during this period is Rs.319.42 standard deviation of profit is 196.15 crores. And, mean return on assets (ROAA) over the 36.85 per cent and standard deviation of ROAA 17.17 per cent. Thus, mean ROAA of Godrej Consumer is 36.85 per cent. However, one noticeable thing regarding Godrej Consumer is that standard deviation in ROAA is 17.17 per cent over the last five years.

Table 4.19: Summary Statistics of Colgate

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	2134.90	307.61	358.85	0.02	147.05
Median	2079.48	330.70	402.58	0.01	140.12
Standard Deviation	476.39	111.82	93.02	0.01	14.36
Sample Variance	226949.43	12504.17	8653.22	0.00	206.24
Kurtosis	-0.71	-2.01	-1.94	0.31	-1.19
Skewness	0.49	-0.27	-0.70	1.26	0.90
Range	1208.24	268.50	214.76	0.02	32.61

Table 4.19 shows that mean sales turnover of Colgate over the last five years is Rs. 2134.90 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs. 476.39 crores. Similarly, mean total assets of Colgate is Rs. 307.61 crores and standard deviation of total assets is Rs.111.82 crores. While mean profit of Colgate during this period is Rs.358.58 standard deviation of profit is 93.02 crores. And, mean return on assets (ROAA) over the 147.05 per cent and standard deviation of ROAA 14.36 per cent. Thus, mean ROAA of Colgate is 147.05 per cent. However, one noticeable thing regarding Colgate is that standard deviation in ROAA is 14.36 per cent over the last five years.

Table 4.20: Summary Statistics of Marico

Summary Statistics	Sales turnover	Total Assets	Profit	d/e ratio	ROAA
Mean	2172.21	1062.698	234.488	0.742	31.142
Standard Error	236.2745	212.0392	41.10332	0.103315	2.823631
Median	2031.9	948.58	235.02	0.66	33.6
Standard Deviation	528.3259	474.134	91.90982	0.231019	6.313832
Sample Variance	279128.2	224803.1	8447.415	0.05337	39.86447
Kurtosis	0.88813	-2.20713	-2.8669	0.335392	-2.13557
Skewness	0.857072	0.438826	0.025998	0.849117	-0.14535
Range	1401.18	1091.45	194.49	0.6	14.93

Table 4.20 shows that mean sales turnover of Marico over the last five years is Rs. 2172.21 crores. Deviation of sales turnover from the mean sales turnover over the last five years is Rs.528.32 crores. Similarly, mean total assets of Marico is Rs. 1062.69 crores and standard deviation of total assets is Rs.474.13 crores. While mean profit of Marico during this period is Rs.234.48 standard deviation of profit is 91.90 crores. And, mean return on assets (ROAA) over the 31.14 per cent and standard deviation of ROAA 6.31 per cent. Thus, mean ROAA of Marico is 31.14 per cent. However, one noticeable thing regarding Marico is that standard deviation in ROAA is 6.31 per cent over the last five years.

We also tried to study intra industry comparison of profitability and return in selected four industries. For this, we employed Analysis of Variance (ANOVA) method to compare profitability of four companies in selected verticals.

Table 4.21 show results of ANOVA test of equal profitability of four selected companies in IT sector. Thus, the null hypothesis was that all companies in IT sector have made equal profit.

Table 4.21: Results of ANOVA (Null of Equal Profit in IT Sector)

SUMMARY						
Groups	Count	Sum	Average	Variance		
TCS	5	33369.45	6673.89	7255952		
Infosys	5	31005	6201	2126904		
Wipro	5	20463.9	4092.78	968762.1		
HCL Tech	5	5983.24	1196.648	200146		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	93452056	3	31150685	11.80871	0.000249	3.238872
Within Groups	42207053	16	2637941			
Total	1.36E+08	19				

From Table 4.21, it is evident that the null of equal profitability of four companies in IT sector is rejected at 1 per cent level of significance. This implies that all the four companies in IT sector is making different levels of profit.

Table 4.22: Results of ANOVA (Null of Equal ROAA in IT industry)

SUMMARY						
Groups	Count	Sum	Average	Variance		
TCS	5	228.34	45.668	29.55507		
Infosys	5	180.47	36.094	6.08308		
Wipro	5	116.91	23.382	4.13987		
HCL Tech	5	140.75	28.15	45.0423		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1428.304	3	476.1015	22.45224	5.6E-06	3.238872
Within Groups	339.2813	16	21.20508			
Total	1767.586	19				

Table 4.22 shows results of ANOVA where the null was that ROAA of all four companies in IT sector is identical. The result establishes that the null of equal ROAA is

rejected at 1 per cent significance level implying that return of assets (ROAA) made by these four companies in IT sector were statistically highly unequal.

Table 4.23 Results of ANOVA (Null of equal Profit in Healthcare Industries)

SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Sun	5	6495.12	1299.024	160599.9		
Reddy	5	3670.02	734.004	44093.03		
Lupin	5	3123.62	624.724	35806.32		
Cipla	5	4644.08	928.816	34299.42		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1316685	3	438894.9	6.388604	0.004728	3.238872
Within Groups	1099195	16	68699.66			
Total	2415879	19				

From Table 4.23, it is evident that the null of equal profitability of four companies in Healthcare Industries is rejected at 1 per cent level of significance. This implies that all the four companies in IT sector is making different levels of profit.

Table 4.24 Results of Anova (Null of Equal ROAA in Healthcare Industries)

SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Sun	5	122.52	24.504	31.05173		
Reddy	5	73.3	14.66	10.20035		
Lupin	5	116.56	23.312	5.97377		
Cipla	5	97.69	19.538	7.11497		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	294.8518	3	98.28393	7.23463	0.002769	3.238872
Within Groups	217.3633	16	13.58521			
Total	512.2151	19				

Table 4.24 shows results of ANOVA where the null was that ROAA of all four companies in Healthcare Industries is identical. The result establishes that the null of equal ROAA is rejected at 1 per cent significance level implying that return of assets

(ROAA) made by these four companies in Healthcare Industries were statistically highly unequal.

Table 4.25 Results of ANOVA

SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
L&T	5	18444.99	3688.998	868160.1		
BHEL	5	23359.35	4671.87	3292380		
Adani Ports	5	3538.9	707.78	150802.7		
Seimens	5	3654.02	730.804	72548.52		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	62313938	3	20771313	18.9524	1.62E-05	3.238872
Within Groups	17535565	16	1095973			
Total	79849504	19				

Table 4.25 shows results of ANOVA where the null was that ROAA of all four companies in Infra sector is identical. The result establishes that the null of equal ROAA is rejected at 1 per cent significance level implying that return of assets (ROAA) made by these four companies in Infra sector were statistically highly unequal.

Table 4.26 ANOVA: Single Factor Infra (ROAA)

SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
L&T	5	119.37	23.874	3.11253		
BHEL	5	204.4	40.88	6.9691		
Adaniports	5	67.07	13.414	3.52913		
Seimens	5	181.19	36.238	50.13967		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	2310.436	3	770.1452	48.32251	3.04E-08	3.238872
Within Groups	255.0017	16	15.93761			
Total	2565.437	19				

Table 4.26 shows results of ANOVA where the null was that ROAA of all four companies in Infra Industries is identical. The result establishes that the null of equal

ROAA is rejected at 1 per cent significance level implying that return of assets (ROAA) made by these four companies in Infra Industries were statistically highly unequal.

Table 4.27 Anova: Single Factor (FMCG)

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Dabur	5	2058.3	411.66	4289.158
Godrej	5	1597.13	319.426	38476.35
Colgate	5	1794.24	358.848	8653.22
Marico	5	1172.44	234.488	8447.415

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	83650.13	3	27883.38	1.863048	0.17655	3.238872
Within Groups	239464.6	16	14966.54			
Total	323114.7	19				

Table 4.27 shows results of ANOVA where the null was that ROAA of all four companies in FMCG sector is identical. The result establishes that the null of equal ROAA is rejected at 1 per cent significance level implying that return of assets (ROAA) made by these four companies in FMCG sector were statistically highly unequal.

Table 4.28 Anova: Single Factor (ROAA)

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Dabur	5	261.85	52.37	136.0606
Godrej	5	184.26	36.852	294.837
Colagate	5	735.23	147.046	206.2442
Marico	5	155.71	31.142	39.86447

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	44080.05	3	14693.35	86.81367	4.09E-10	3.238872
Within Groups	2708.025	16	169.2516			
Total	46788.08	19				

Table 4.28 shows results of ANOVA where the null was that ROAA of all four companies in FMCG Industries is identical. The result establishes that the null of equal ROAA is rejected at 1 per cent significance level implying that return of assets (ROAA) made by these four companies in FMCG Industries were statistically highly unequal.

This study using panel data set on four companies from four verticals for five years tried to explain performance of Indian corporate sector during 2008 to 2012. Performance of the corporate sector is measured through profitability of companies. Thus, the dependent variable in this study is net profit. The independent variables are sales turnover (ST), total assets (TA), debt/equity ratio (Debt) and return on assets (ROA). Table 4.30 shows results of panel data by simple OLS method.

Table 4.29: Panel Results

Dependent Variable: PROFIT				
Method: Least Squares				
Sample: 1 80				
Included observations: 80				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	34.06991	301.4974	0.113002	0.9103
ST	0.023318	0.022358	1.042946	0.3003
TA	0.198057	0.034241	5.784242	0.0000
DEBT	-1201.029	447.4089	-2.684409	0.0089
ROA	6.339775	4.228225	1.499394	0.1380
R-squared	0.809002	Mean dependent var		2054.673
Adjusted R-squared	0.798816	S.D. dependent var		2336.420
S.E. of regression	1047.967	Akaike info criterion		16.80755
Sum squared resid	82367682	Schwarz criterion		16.95643
Log likelihood	-667.3022	F-statistic		79.41878
Durbin-Watson stat	0.611703	Prob(F-statistic)		0.000000

Table 4.29 indicates that coefficients of all independent variables are on expected lines. The sign of coefficient sales turnover with profit is positive which is on expected line. Thus, it establishes the hypothesis that profit and sales turnover have positive relation. Similarly, profit and total assets are positively related. However, profit is negatively related with debt/equity ratio of companies, which is a measure of risk in this study. Finally, ROA is also positively related with profit or performance of corporate sector.

Results of Table 4.29 shows that only two independent variables are statistically significant at 5 per cent level. Sales turnover is not a determinant of profit. Total assets is statistically highly significant indicating that size of the company as proxied by total assets is determining profit or performance of a company. Debt/equity ratio or what is called leverage is also seem to be important predictor of corporate performance in India. Though ROA has positive relation with profit but it is not a statistically significant predictor of profitability in India. ROA is statistically not significant even at 10 per cent level.

The fit of the model as indicated by adjusted R square is 0.79. Thus, the above model is able to explain 79 per cent variation in profit, which is quite good by any standard. The overall fit as shown by F-statistic that the model is significant and the null of all slope coefficients of the model can be rejected at 1 per cent level.

Table 4.29 shows that D-W statistic for the simple OLS panel estimation results is 0.61 which indicate that assumption of no autocorrelation is violated. To tackle the problem of autocorrelation and account for sector specific difference, this study estimated fixed effect panel regression model with dummy technique also called least square dummy variable (LSDV) model. We introduced three dummy variables for four sectors taking FMCG as the benchmark. Table 4.31 shows results of LSDV model.

Table 4.30: Results of LSDV Model

Dependent Variable: PROFIT				
Method: Least Squares				
Date: 06/21/13 Time: 16:37				
Sample: 1 80				
Included observations: 80				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	29.34403	277.2283	0.105848	0.9160
ST	0.082239	0.024845	3.310082	0.0015
TA	0.090790	0.037968	2.391223	0.0194
DEBT	-442.3851	455.4472	-0.971320	0.3346
ROA	5.016375	4.486114	1.118200	0.2672
D1	1258.601	344.4316	3.654139	0.0005
D2	-172.8983	387.4466	-0.446251	0.6568
D3	-539.5640	377.9112	-1.427753	0.1577
R-squared	0.860206	Mean dependent var		2054.673
Adjusted R-squared	0.846615	S.D. dependent var		2336.420
S.E. of regression	915.0445	Akaike info criterion		16.57046
Sum squared resid	60286069	Schwarz criterion		16.80866
Log likelihood	-654.8185	F-statistic		63.29203
Durbin-Watson stat	0.655111	Prob(F-statistic)		0.000000

Results of LSDV model is very similar to OLS results reported in Table 4. 30. The sign of coefficients of all independent variables remained consistent with the previous model. However, sales turnover variable which was insignificant earlier, turned to be statistically significant in LSDV model. Total asset is still an important predictor of corporate profitability. However, debt/equity ratio, which was significant in earlier model now became statistically insignificant. The fit of the model has slightly increased from 79 percent to 84 per cent. Coefficient of dummy variable D1 indicates that on average profitability of IT industry is higher by 1258 crores compared to the benchmark. Thus, all four industries are not identical in terms of their performance. They are different from each other in terms of size, profitability and ROA.

CHAPTER 5

SUMMARY AND CONCLUSION

India since Independence followed a very restrictive corporate policy till 1990-91 where private corporate sector had very little scope to grow and flourish due to socialistic pattern of industrial development in which profit was considered as a 'dirty' word. Followed by balance of payment crisis in early years of 1990s economic reforms initiated comprising a variety of deregulatory measures which significantly altered the environment in which the Indian corporate sector operated earlier. The economic reforms since 1991 have brought many changes to the environment in which Indian companies previously operated. The principal aim of these reforms was to strengthen market discipline and promote greater competition by putting an end to the "license raj," namely through the abolition of the Industries Development and Regulation Act (1951) and amendments to the Companies Act and several other major laws, which had imposed a heavy legal and regulatory burden on the corporate sector.

In addition, the foreign trade regime was liberalised through cuts in tariff rates, reductions in nontariff barriers, and a streamlining of import licenses; foreign investment opportunities were increased; and shareholders' rights were improved. Indian companies were allowed to enter into joint ventures with multinational enterprises more freely, import new technologies and capital goods, expand productive capacity, and introduce new products without obtaining industrial licenses. More recently, steps have been taken to de-reserve a number of small-scale industries, particularly those industries with the greatest export potential.

India's corporate sector has grown steadily over the past two decades in terms of number of registered companies and amount of paid up capital. The corporate sector consists of closely held (private limited) and publicly held (public limited) companies, with approximately 619,000 registered companies as of June 2003, about 40 percent of which are in the manufacturing sector. Private limited companies comprise the majority of firms

in the corporate sector, but account for less than one-third of total paid up capital. Government-owned enterprises (both public and private limited) are comparatively few in number but large in size, accounting for more than 25 percent of the paid up capital. The share of total output by government enterprises has been declining since the start of reforms, falling from 32 percent of gross industrial value added in 1991 to 25 percent in 2002.

India's corporate sector is supported by a well-established equity market. Currently, there are 23 registered stock exchanges in India, with total market capitalisation of US\$131 billion at end-2002, equivalent to 26 percent of GDP and compared with 21 percent in 1990. The equity market is dominated by the Bombay Stock Exchange—the oldest in Asia—and the National Stock Exchange (NSE). The NSE began operations in 1994 in response to a government effort to improve the efficiency and transparency of India's equity market. It quickly established itself as the foremost stock exchange in the country. Efforts are under way to close and/or consolidate a number of regional stock exchanges that have been generally thinly traded but largely sustained by listing requirements governing publicly traded companies operating in a different region.

During the reform period, India's corporate sector initially strengthened, but in recent years, it has shown signs of weakening in line with the slowdown in economic growth and industrial production. Though the pace of economic reform has faltered in recent years but the overall direction of policy change remains the same and seeks to strengthen market discipline and enhance competition. The success of the new policy regime was expected to and is likely to depend on the strategies adopted by firms in response to these policies and fine tuning of policies by taking cognizance of emerging trends in firm level choices.

In this backdrop, this study tried to explain the performance of the Indian corporate sector during 2008 and 2012. We selected four sectors namely IT, FMCG, Infra and Healthcare sector for studying performance of the Indian corporate sector. From each sector, four companies were selected on the basis of their market capitalisation from 2008 to 2012.

Data on profit, sales turnover, total assets, debt/equity ratio, and return of assets were collected for the study. Descriptive statistics was used to assess the overall performance of companies in selected sectors. The mean sales turnover of TCS over the last five years was Rs. 26,423.97 crores. Deviation of sales turnover from the mean sales turnover over the last five years was Rs. 7,945.86 crores. Similarly, mean total assets of TCS was Rs. 16847.1 crores and standard deviation of total assets was Rs. 5510 crores. While mean profit of TCS during this period was Rs.6673.89 standard deviation of profit was 2693.68 crores and mean return on assets (ROAA) over the sample period of 2008 and 2012 was 45.66 per cent and its standard deviation was 5.43 per cent.

Similarly, from healthcare sector, Sun Pharma showed that mean sales turnover of Sun Pharma over the last five years was Rs. 2643.68 crores. Deviation of sales turnover from the mean sales turnover over the last five years was Rs. 886.90 crores. Similarly, mean total assets of Sun Pharma was Rs. 6022.52 crores and standard deviation of total assets was Rs. 1478.99 crores. While mean profit of Sun Pharma during this period was Rs.1299.02 standard deviation of profit was 400.74 crores. The mean return on assets (ROAA) over the sample period 24.50 per cent and standard deviation of ROAA 5.57 per cent. Thus, mean ROAA of Sun Pharma was 24.50 per cent.

Results of ANOVA showed that profit earned by each company in IT industry was different over the sample period. Not only the profit but also the ROAA of the companies in IT sector were different. This is true for all the four verticals selected in this study.

Results of panel estimation showed that while sales turnover, total assets, and ROAA are positively related with profit. However, debt/equity ratio is negatively related with profit. Results also indicated that corporate performance in India are explained by the variables such as sales turnover and size of total assets. ROAA and debt/equity ratio are not important predictors of corporate performance in India.

One of the limitations of the study was that only few sectors were undertaken in investigating the relation between profit and relevant variables. Moreover, one can use a larger data set for more than five years to establish facts regarding corporate performance in India. Future research can be undertaken in these areas.

REFERENCES

- Athukorala, Prema-Chandra, and Kunal Sen. "The determinants of private saving in India." *World Development* 32.3 (2004): 491-503.
- Bhunia, A. (2010). "A Study of Liquidity Trends on Private Sector Steel Companies in India", *Asian Journal of Management Research*, 1(1):618:628 <http://www.ipublishing.co.in/ajmrvol1no1/EIJMRS1056.pdf>; Access on April 23, 2012.
- Building a BRIC? Stock Market Opening and Investment Finance in India since Liberalisation.
- Chaudhuri, Kausik, Friedrich Schneider, and Sumana Chattopadhyay. "The size and development of the shadow economy: An empirical investigation from states of India." *Journal of Development Economics* 80.2 (2006): 428-443.
- Gunasekaran, Indhumathi, and Murugesan Selvam. "Effect of Mergers on the Corporate Performance of Acquirer and Target Companies in India." Available at SSRN 1801143 (2011).
- Sarkar, Jayati and Sarkar, Subrata, (2009), Multiple board appointments and firm performance in emerging economies: Evidence from India, *Pacific-Basin Finance Journal*, 17, issue 2, p. 271-293,
- Industries: The Case of India', *Annals of Public and Cooperative Economics*, 63(3):489-495.
- Irala, Dr. Lokanandha Reddy, *Corporate Performance Measures in India: An Empirical Analysis* (January 1, 2007).
- Jain, Sanjiv Kumar, and Inderpreet Singh Ahuja. "An evaluation of ISO 9000 initiatives in Indian industry for enhanced manufacturing performance." *International Journal of Productivity and Performance Management* 61.7 (2012): 778-804.
- Jangili, Ramesh, and Sharad Kumar. "Determinants of Private Corporate Sector Investment in India." (2010): 67-89.
- Jha, R. and Sahni, B.S. (1992). 'Measures of Efficiency in Private and Public Sector
- Joshi, V. and I.M.D. Little (1997). 'India – Reform on Hold' *Asian Development Review*, 15(2): 1-42.
- Kumar, Raj. "Post-merger corporate performance: an Indian perspective." *Management Research News* 32.2 (2009): 145-157.

- Majumdar, Raju. "The Determinants of Indebtedness in Unlisted Manufacturing Firms in India: A Panel Data Analysis." (2012).
- Majumdar, S.K (1995). 'Public, Joint and Private Sectors in Indian Industry – Evaluating Relative Performance Differences', *Economic and Political Weekly*, XXX (7-8): M25-32.
- Pande, A. (1999). 'Public Sector Competitiveness', *Productivity*, 40(2): 193-197.
- Pani, Upananda. "Dividend Policy and Stock Price Behaviour in Indian Corporate Sector: A panel data approach." Retrieved from Indian Institute of Technology: <http://ssrn.com/abstract/1216171> (2008).
- Phani Tej Adidam, Madhumita Banerjee, Paurav Shukla, (2012) "Competitive intelligence and firm's performance in emerging markets: an exploratory study in India", *Journal of Business & Industrial Marketing*, Vol. 27 Iss: 3, pp.242 – 254
- Raheman, A., Nasr, M. (2007) "Working Capital Management and Profitability-Case of Pakistani Firms", *International Review of Business Research Papers*, 3(1):279-300.
- Saravanan, Palanisamy. "Corporate Governance and Company Performance: A Study with Reference to Manufacturing Firms in India." Available at SSRN 2063677 (2012).
- Snowden, Nicholas, and Jesus Munoz. "Building a BRIC? Stock Market Opening and Investment Finance in India since Liberalization." *World Development* 40.6 (2011): 1109-1121.
- Srinivasan, P. "Determinants of Equity Share Prices in India: A Panel Data Approach." *Romanian Economic Journal* 15.45 (2012): 205-228.
- Wei, Wenhui. "China and India: Any difference in their FDI performances?." *Journal of Asian Economics* 16.4 (2005): 719-736.