CHAPTER I

Introduction

The prosperity of any country’s economy is propelled by the robust development of corporate sector. Corporate sector existed in the ancient past in one form or other. But, at that time much attention was not paid to it. With the passage of time, the corporate sector has come to play a predominant role in the economic life of almost all countries, irrespective of their ideological moorings. This sector has been recognized as a model and democratic form of any business organization. It occupies a pivotal place not only in the industrially advanced countries, but also in the developing countries like India. The process of industrialization and development of business activity in these countries are inter-related and inter-dependent. This sector, in turn, operates within the perview of the economic environment, industrial culture and political and social philosophy.

The corporate sector is the backbone of the Indian economy so far as it provides a vital, effective and organized system for the growth of the industrial as well as non industrial sectors of the economy. The contribution of corporate sector towards the balanced development of various areas of an organized economic activity can easily be seen in the combined efforts of various companies in achieving the goal of industrialization and increased production. Corporate sectors have short term goals such as improving annual profits and value addition as well as long term goals in terms of contribution to national wealth, creation of more employment, building up infrastructural facilities, building up a broad-based and healthy capital structure, operating of essential services, creating export potential and thereby participating actively in the overall economic growth of a country and improving the standard of living of its people. Ultimately, the Gross Domestic Product (GDP) and the tax revenue to the government in the form of both direct and indirect taxes are
maximized. The rapid growth of the corporate sector in India and the increasing scale of its operations and investments have turned it into the most dominant form of economic organization.

The ever increasing importance and role of corporate sector in the economic growth of a country, particularly, in developing countries like India, have attracted several academicians, professional institutions, researchers and administrators to conduct diverse studies in the area. There is the need to study the industry’s internal efficiency which ultimately shall determine the overall industrial development in future. The present study is a small endeavour to update our knowledge in this aspect.

**Meaning and concept of performance appraisal**

The phrase “performance appraisal” is composed of two words, i.e., “Performance” and “Appraisal”. The word “Performance” is used to mean the efforts extended to achieve the targets efficiently and effectively. The dictionary meaning of performance refers to “achievement”. The achievement of targets involves the integrated use of human, financial and natural resources. Performance directly reflects the disposition and utilization of the resources. Appraisal refers to a critical review of the activities for improving performance. It compares the actual performance with targets fixed, identifies causes of significant variations, and devises corrective actions.

This is naturally tuned to assessing whether the business operations would be safe, profitable, and appropriate in a given economic situation. It is known that in the interest of good health, medical authorities generally advise every individual to have a periodical checkup and examination of his body. Similarly, in the interest of good operating results every concern should have

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a periodical appraisal—both diagnostic as well as preventive in nature. In the case of an already bad or deteriorating situation it locates the areas and indicates where to improve, where, as in case of good condition, it shows ways to further improve the performance.

Performance might be improved by paying attention on how a unit has improved on an accepted standard and the lessons learned may be applied with advantage to other units rather than directing the efforts to eliminate deviations from the plan. Checking performance is the third major management activity, which the financial planning and control function aims to assist in particular. It implies the existence of a benchmark against which actual results can be compared. The assessment of business performance is more complex and difficult, since it must deal with the effectiveness with which capital is employed, the efficiency and profitability of operations and the value and safety of various claims against the business.

Performance Appraisal through Financial Statement Analysis

Appraisal of performance of a company can be done through a careful and critical analysis of financial statements; financial analysis helps managers in controlling their enterprise’s performance. It does this by providing them with a system and set of procedures for analyzing and understanding financial indicators of performance. The two important financial statements are the “Profit and Loss Account” and the “Balance Sheet”. Although any formal statement expressed in money value might be thought of as financial statement, the term has come to be limited by most accounting and business

writers to mean the “Profit and Loss Account.” and “Balance Sheet”
Financial statements indicate the operating results and financial position of a concern; therefore, by analyzing and interpreting these statements performance can be appraised. It is for this purpose, analysis of financial statements is made.

Financial statement analysis is a preliminary step towards the final evaluation of the results drawn by the analyst or management accountant. Appraisal or evaluation of such results is made thereafter by the management. The analysis of financial statements spotlights the significant facts and relationships concerning management performance, corporate efficiency, financial strength and weakness, which would have otherwise been buried in a maze of details. According to Metoalf and Titard, analysis of financial statements is a process of evaluating relationship between component parts of financial statement to obtain a better understanding of a firm’s position and performance.

Process of Performance Appraisal

The financial statements contain all the data relating to operating results and financial position of the business. Besides this, other documents such as reports, schedules and explanatory notes are also appended. Overall performance of the business is appraised by analyzing these statements. Hence, the process of financial statement analysis is the key process of

performance appraisal. The process of performance appraisal through financial statement analysis is summarized as:

(i). Some logical arrangement of financial data is made in an orderly sequence in a condensed form. The balance sheet and profit and loss account figures are rearranged to facilitate performance appraisal.

(ii). Figures are approximated to the nearest thousands or lakhs or crores to simplify the process of appraisal.

(iii). The analyst should utilize his knowledge of financial statements to draw up performance appraisal programme, which must be tailored to fit in the specific needs.

(iv). Performance appraisal may be conducted either internally or externally. Internal appraisal is accomplished by those who are within the enterprise and have access to detailed records and all other information related to business.

Such appraisal is generally conducted by the management for their purposes. External appraisal, on the other hand, is conducted by those or for those who are outside a business enterprise, such as share holders, creditors, bankers, trade unions, government agencies and research scholars. The present study is similarly executed by the research scholar.

**Importance and Usefulness of Performance Appraisal**

In any economic society all active participants do become interested in varying degrees in the performance of the business enterprise. Within every commercial enterprise, of whatever size, there are inevitably many different interests to be served. Some of these interest groups include owners,
employees, customers, society, government, suppliers and managers. By appraising the performance through financial statement analysis, management may review a company’s progress to date and decide upon the course of action to be taken in future. Performance appraisal helps management in the task of planning of operations.

The performance appraisal programme enables the management to operate the control system of the business organization more effectively. It helps to identify the weaker spots of a company’s operations and to take corrective action. Furthermore, it tends to restrain management as they are under pressure to maintain a favourable financial position. Investors comprising share holders and debenture holders, have a vital interest in the appraisal of performance of an enterprise. Investors are interested in two things:

Firstly, they want the safety of their investment; secondly, the ability of a company to earn profit. They are also interested in a concern whose future is bright. Through performance appraisal they get the information which they need. Creditors are interested in ascertaining whether the company can employ the funds loaned to in such a way that it will be to meet current interest obligations and repay loans when it falls due. They act as a magic eye highlighting the credit worthiness of a company. Creditors often appraise the performance of a company before lending the money and supplying the goods. Government regulates economic activities in various spheres. Central and state governments and local authorities are also interested in knowing the performance of a business in order to access their revenues through various taxes to regulate capital issues and public utility regulations. Employees have an interest in the operating results and the financial strength of a company. The remuneration of workers must be generated from the company’s revenues.
Thus, worker’s wages, to a great extent, depend upon the success of the firm. Labour unions use the performance data as a basis for their demand for increase in wages. The past operating performance of the business as well as its current financial position is often studied to measure the ability of the enterprise to meet new wage commitments. Every business enterprise has its own social responsibility. Although managers, owners, creditors and employees are members of the society and have their respective interest in the business, the society as a whole has some expectations from the business. So, they are all interested in knowing the social performance such as environmental obligations, labours and social welfare, employment generated, regional development etc. In addition to the above, news agencies, trade associations, economic and commercial research institutions, stock exchanges, economist and research workers, members of parliament, members of public accounts committee in respect of government companies are also interested in the results of performance appraisal, of knowing the progress being made in the present position of an industry.

**Tools and Techniques for Performance Analysis**

There are many techniques which may be used for performance analysis. These techniques may be classified as follows:

a) Accounting techniques  
b) Statistical techniques  
c) Mathematical techniques

Accounting techniques or tools which may be used for performance analysis are many such as ratio analysis, common-size statement analysis, trend analysis, comparative statement analysis, value added analysis etc. The users pick up the techniques to suit their requirements and also on the basis of data available to them. Further, use of statistical techniques has become a
normal phenomenon in any type of analysis. These statistical techniques which are proposed to be used in financial statement analysis consists of measuring the central tendencies like mean, median, mode, measures of dispersion, like range, mean deviation and standard deviation, correlation and regression analysis. Analysis of time service, analysis of variance, etc., further, the use of various mathematical tools generally applied are Programme Evaluation and Review Techniques (PERT), Critical Path Method (CPM), linear programming etc. However, in this study various accounting and statistical techniques have been applied for analyzing the financial statement. The mathematical techniques could not be applied in the present study for want of necessary data.

**Scope of the Study**

Performance analysis is the process of determining the operating and financial characteristics of a firm from accounting and financial statements. The goals of such analysis are to determine the efficiencies or performance of a firm’s management as reflected in the financial records and reports. The analyst attempts to measure the firms operating performance, profitability, liquidity, solvency etc., to prove that the business is conducted in a rational and normal way ensuring enough returns to the shareholders to at least maintain its market value. Keeping in view the interest of investors and the society as a whole, a company’s performance can be evaluated broadly on three counts:

1. On the basis of its operating achievement
2. On the basis of its financial achievement
3. On the basis of its social achievement

All the above factors have their own importance. Yet, an investor, apart from other things, first looks to get back sufficient returns from his
investment. Therefore, performance appraisal of a company stands the most important factor for its evaluation. The study continues itself with the performance appraisal of selected industries. It excludes non financial areas such as personal, research and development from its purview.

**Statement of the Problem**

India’s manufacturing sector used to account for only about 10 per cent of its GDP in the early 1950s, but currently it accounts for about 19 per cent. The sector was highly protected from any form of both internal and external competition over a long period of time until the early 1990’s when the country embraced the new economic policy. Since 1991, the manufacturing sector in the country has been undergoing a wave of liberalization. The main objective of it is to reduce the entry of both external and internal barriers. Such a reduction, it was argued, would enhance the competitiveness of the sector and thereby making it more efficient. Since 1992-93, the manufacturing sector has grown at the rate of about 6.9 per cent per annum, though there have been considerable fluctuations in its growth rate. Against this background, it is very important to analyse the performance of manufacturing sector after liberalization to show how the liberalization has really led to an improvement in the growth performance of the sector.

In India, the automobile industry is one of the largest industries. It is one of the key sectors of the economy. The industry has shown great advances since de-licensing and opening up of the sector to Foreign Direct Investment (FDI) in 1991-92. It has deep forward and backward linkages with the rest of the economy, and hence has strong multiplier effect. The automobile industry including manufacturing of component is estimated to provide employment directly to approximately 5 lakhs of people and indirectly to around 50 million people. This results in the automobile industry being the driver of economic growth and India is keen to use it as a level of accelerated growth in
the country. Therefore, the present study is undertaken to make a performance appraisal of the selected sectors of the Indian automobile industry. The study is undertaken to analyse the growth of automobile industry after liberalization, its production trend, sales trend, profitability analysis, financial structure, financial performance, assessment of financial health, Economic Value Added (EVA) and Market Value Added (MVA) analysis of the industry.

Production is considered as the backbone of the manufacturing sector. Production function is considered as the effective tool to satisfy the customer’s demand. The study of the production performance is important to know the operating level of the business and the financial efficiency of the business enterprise. Survival of the business in the present competitive world depends on the quality production and the technological development in the business. Therefore, the present study attempts to make a precise analysis on the production trend of the Indian automobile industry after liberalization. Further, the analysis of capacity utilization can significantly provide the production performance of the industry as a whole. Taking this into consideration, attempt has also been made to study the capacity utilization of the selected sectors of the Indian automobile industry.

Sales is an important component for the development of business. Sales can be enhanced only by following good sales policy. Due to pricing policy of the government, companies face fluctuations in their sales. These fluctuations may lead to increase or decrease in the financial risk of the companies. The present study is carried out to study the sales trends of the automobile industry in India.

The efficiency of the business is measured by the amount of profit earned. The greater the profit, the more efficient is the business considered to be. The profit of a business may be measured by studying the profitability of
investment in it. Profitability may be defined as the ability of a given investment to earn a return from its use. This ability is referred to as lending power or operating performance of the investment concerned. Profitability is a relative term and its relation with the other factors affects profit. It is the test of efficiency, powerful motivational factor and the measure of control in any business. Hence, an attempt has been made to study the profitability of Indian automobile industry.

Actually, profitability is a highly sensitive economic variable which is affected by a host of factors operating through a variety of ways. Some of them affect product prices and quantities; some affect cost of production while others make changes in capital stock, size, market share and growth of the firm. Further, corporate policy relating to various functions will affect profitability. Some of them are relevant in the short run while others have impact in the long run. It is difficult to build a theory of profitability, which accounts for all such factors. Because of these difficulties, it is quite natural to analyze the variation in profitability by taking the partial approach i.e., to find the effect of certain major variables, ignoring the implications of other left out independent variables at a time. The present study is a step towards this direction.

Financial appraisal provides a method for accessing the financial strengths and weaknesses of the Indian automobile industry using financial statement. There are two views of the financial strength of every organization based on the period of lending i.e., the short term and long term. Short term financial strength relates to the technical solvency of an organization in the near future, while the long-term financial strength depends on the structure that has been imposed in financing more permanent asset requirements. The study analyses the short-term and long-term financial strength of the Indian automobile industry.
The assessment of the corporate financial condition is important to financial analysts worldwide. The ability to discriminate between the weak and the strong, or between those that will fail or prosper, is critical to successful economic development. Bankers, suppliers of trade credit, stockholders, stock exchanges and governmental regulatory bodies etc., have all vested interest in appraising the strength of emerging and established companies. To properly assess financial health, traditional financial ratio analysis is very important, but it can be used in conjunction with other tools. This study combines ratio analysis with statistical techniques and discriminate analysis. It applies popular model, the Altman’s Z Score Model (Altman’s, 1968) in order to access the financial health of selected sectors of the Indian automobile industry.

According to accounting concept, business profit is measured by deducting expenses from income earned during the period. Notably, the accounting concept does not take into account opportunity cost and risk adjusted return on capital employed in business. In order to overcome limitations of accounting-based measures of financial performance, Stern Steward and Company adopted modified concept of economic profit in 1990 named Economic Value Added (EVA)\textsuperscript{10}. EVA as a tool of financial management enlightens us that operating profit is enough to cover the cost of capital. Share holders must earn sufficient returns for the risk they have taken in investing their funds in a company’s capital. The EVA frame work, which is becoming a more and more admired tool for measuring the financial performance in corporate, offers a consistent approach to set goals and measure performance, communicate with investors, evaluate strategies, allocate capital valuing acquisitions and determine incentive bonuses. The recognition of this concept in India is gradually picking up and it is expected


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that in the coming years more and more Indian companies will start relying upon this new measuring of financial performance. It can be believed that the concept of economic value added, which is reasonably old in the West, appears relatively a new magic portion to Indian corporation and this has basically required the investigators to glimpse through its nuts and bolts particularly to value what EVA is all about in Indian context. This is the reason why the present study has made an attempt to analyse emergence of EVA in the selected sectors of the Indian automobile industry.

The liberalization measures culminated in 1990-91 have opened up new business opportunities and allowed the expansion of the existing business similar to that of the corporations depending more on their performance and global competitiveness than on protection. This new situation demands more accurate tools for measuring the performance of the corporate, shareholders, managers, employees, customers, governments and other interested people who want to know whether the performance of the corporation justifies the investment made in them. For them, the conventional tools do not provide required information. So, this study aims to build new methods of analysing the performance of the corporations, by taking cases from accounting, statistics, finance and quantitative methods.

**Selection of Automobile Industry**

Transport sector plays a key role in a country’s economic growth and development. Transportation throughout the world has made possible unprecedented level of mobility across the geographical boundaries. The mobility has given many people more options about where to live, and work than they had years ago. Similarly, mobility has broadened the access of business to new markets and more choices by increasing the available pool of resources. From the economic point of view, transportation is a vital factor for steady economic growth and development. The trade facilitated by
transportation has been a growing component of national income in all countries. Studies show that the contribution of transportation in GDP has a positive impact\textsuperscript{11}. The structure of the economy also influences the transport system\textsuperscript{12} because consumer expenditure on transportation contributes to national economy. Transport sector is equally important for both industrialized and developing economies. Transport sector including water transport, aviation and surface transport are major players of Gross Domestic Product (GDP), which includes the value of all goods and services. Being the largest transport networking in the world, particularly in road transportation, automobile industry plays a significant role in the GDP of the country.

Automobile industry is a major constituent of surface transport. Automobiles include passenger cars, commercial vehicles, two and three wheelers; India has growing market potential for automobiles due to rise in demand. As a result, more and more manufacturers are bringing in new forms of the existing product because diffusion of a new product depends upon demand statistics. Automobile manufacturers, particularly car manufacturers, are attracting buyers with new model, shopping to tap growing demand for automobiles. Utility vehicles also post significant growth. Further, two and three wheelers industries, specially the motor cycle segments, have shown a steep jump, while the volume growth of all the players has recorded pretty good market share. Therefore, automobile industry has been selected for this study in order to determine its performance appraisal during the study period. The research focuses on automobiles such as commercial vehicles, passenger cars and multiutility vehicles and two and three wheelers.

\textsuperscript{11} ENO transportation foundation Inc., Transportation in American, Lansdowne, EVA, 1996.

Significance of the Study

Performance appraisal is of special importance in industries, and automobile industry is one such industry. From the point of view of the socio-economic development of the country, automobile industry is significant enough in terms of investment and employment. The sales and profitability function in automobile industry differs from that of other industries. Even though many studies in the direction have been conducted, the present one would be of greater significance to many because it would help to understand the pattern and the structure of financial variables of leading companies apart from identifying the financial relationship of companies with their respective industries. The change in the economic policy of the government certainly has made impact on the performance of corporate units in India. A need at the present juncture has therefore created the necessity to study the impact of such changes on the performance of corporate sector, hence the research problem has to be changed to “Performance Appraisal of Indian Automobile Industry”. The particular topic has been selected for the study because continuous effort has been made to examine the changes that might have occurred in the performance of automobile industry due to the changes in the government policy.

As such, the study is expected to help the corporate management, the financiers, the investors and the government at large, to take valuable decisions on their own. The study has academic relevance too in so far as new theoretical and practical knowledge would undoubtedly, be added to the existing stock of knowledge. The present study will act as a masterpiece on the subject for further research and development. There is no study on performance appraisal of Indian automobile industry after liberalization. Therefore, covering the gaps in the earlier studies, the present study is undertaken to give an insight into the performance appraisal of selected sectors of Indian automobile industry. It would also enable shareholders,
investors and investment analysts to identify the determinants of corporate performance; further it would provide insight to banks, financial institutions and long term lenders to understand the financial capability and effectiveness of the companies. Moreover, it would open up new vistas for the industry association and the government in understanding the characteristics of the companies for inter and intra firm comparison. It might also help the academic researchers, researchers in securities, industries and companies by providing different perspectives.

**Objectives of the study**

The primary purpose of the present study is to obtain a true insight into the performance of the select automobile industry in India. An appraisal of performance is made from the accounting point of view to assess the effectiveness of plans, policies and objectives of the industry by measuring the efficiency of the automobile industry under the study, in various areas of operations. For carrying out the study, the following specific objectives have been set.

1. To analyse the trends of production, capacity utilization, sales and market share of the selected sectors of Indian automobile industry.
2. To study the profitability position, trends and determinants of profitability of the selected sectors of Indian automobile industry.
3. To analyse the financial structure, financial position, assessment of financial health and offer an economic interpretation of the selected sectors of Indian automobile industry.
4. To compute and analyse Economic Value Added (EVA) and Market Value Added (MVA) of the selected sectors of Indian automobile industry.
5. To make suggestions for improvement of successful survival in the competitive business world.
Hypothesis

Hypothesis means a proposition or supposition made as the basis for reasoning or investigation. The researcher must select from the intricacy of observed events such considerable and pertinent facts that would most effectively elucidate the problem under study. It gives us an idea about indispensable associations, which exist between the different fundamentals within the complexity. Therefore, the hypotheses of the present study are:

1. Hypotheses for Trend analyses
   (i). There is no significant difference between actual production and trend values of production among different years in the select sectors of Indian automobile industry.
   (ii). There is no significant difference between actual sales and trend values of sales among different years in the select sectors of Indian automobile industry.

2. Hypothesis for Profitability analysis
   (i). There is no significant difference in the mean percentage of profitability ratios between years and between the sectors in Indian automobile industry.

3. Hypotheses for Determinants of profitability
   (i). There is a positive relationship between size and growth rate of assets.
   (ii). Profitability is negatively correlated with leverage and current ratio.
   (iii). There is a positive relationship between inventory turnover ratio and profitability.
   (iv). Fixed assets turnover ratio, vertical integration and past profitability are positively correlated with the profitability.
   (v). Profitability is negatively correlated with operating expenses to sales ratio.
4. **Hypotheses for Financial structure analysis**

(i). Financial leverage is independent on industry class.

(ii). Financial leverage is independent on industry size.

(iii). Financial leverage and profitability are independent on each other.

(iv). Financial leverage and operating leverage have got no association between them.

(v). Financial leverage and external financing are independent of each other.

(vi). Financial leverage has got no association with income gearing.

5. **Hypothesis for Financial position analysis**

(i). There is no any significant difference in short term and long term financial ratios between years and between the sectors of Indian automobile industry.

The above hypothesis have been taken for the study and they have been tested with the help of ‘t’ test and ‘F’ test.

**Research design**

It is not possible in practice for an individual researcher to approach all the minute details in the universe for the study. Researcher selects only a small amount of bits and pieces from the universe for the purpose of the study on the basis of stratified sampling. The sample so selected constitutes the sample design for the purpose. A research design is a definite plan for obtaining a sample from a given populations. Research design means a sketch or a drawing of a research project’s structure. It comprises a series of prior pronouncements that, taken together, provide a roadmap for carrying out a research project. The research design of the present study is outlined here under.
Selection of sample

Keeping in view the scope of the study, it is decided to include all the companies under automobile industry working before or from the year 1995-96 to 2005-06. But, owing to several constraints such as non-availability of financial statements or non-working of a company in a particular year etc., it is compelled to restrict the number of sample companies to 12. Therefore, this study is exposed to facts based on survey method, making a survey of twelve companies in Indian automobile industry. There are 26 companies operating in the Indian Automobile Industry. The companies under automobile industry are classified into three sectors namely; commercial vehicles, passenger cars and multiutility vehicles and two and three wheelers. The details of the sector with the available companies of Indian automobile industry are presented in Table 1.1.

Table 1.1
Total number of companies available in Indian Automobile Industry

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Sectors</th>
<th>Total companies available</th>
<th>11 years data available companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Commercial Vehicles</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Passenger Cars and Multiutility Vehicles</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Two and Three Wheelers</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>26</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: Prowess Database, 2005.

For the purpose of the study all the three sectors have been selected. The selected sectors include 26 companies. Out of 26 companies, 5 are under commercial vehicles, 8 under passenger cars and multiutility vehicles and 13 under two and three wheelers sector. Out of 26 companies of the selected sectors, 11 years data is available for 12 companies only. Therefore, all the 12
companies are included in the sample. It accounts for 46.15 per cent of the total companies available in the Indian automobile industry. The selected 12 companies include 4 under commercial vehicles, 4 under passenger cars and multiutility vehicles and 4 under two and three wheelers sectors. List of companies selected included in the present study along with year of incorporation, ownership and its market share is presented in Table 1.2.

Table 1.2
List of sample companies included in the present study

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Sectors / Companies</th>
<th>Year of Incorporation</th>
<th>Ownership</th>
<th>Market share (%)</th>
<th>Total market share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commercial Vehicles (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Ashok Leyland Ltd</td>
<td>1956</td>
<td>Hinduja Group</td>
<td>35.62</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Tata Motors Ltd</td>
<td>1956</td>
<td>Tata Group</td>
<td>34.22</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Eicher Motors Ltd</td>
<td>1982</td>
<td>Eicher Group</td>
<td>10.65</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Swaraj Mazda Ltd</td>
<td>1983</td>
<td>State and Private Sector</td>
<td>6.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Passenger Cars and Multiutility Vehicles (4)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Hindustan Motors Ltd</td>
<td>1942</td>
<td>Birla C.K.Group</td>
<td>8.31</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Mahindra and Mahindra Ltd</td>
<td>1945</td>
<td>Mahindra and Mahindra</td>
<td>42.17</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Maruthi Udyog Ltd</td>
<td>1981</td>
<td>Private (Foreign)</td>
<td>36.60</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Daewoo Motors India Ltd*</td>
<td>1983</td>
<td>Private (Foreign)</td>
<td>2.68</td>
<td><strong>89.76</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Two and Three Wheelers (4)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Bajaj Auto Ltd</td>
<td>1945</td>
<td>Bajaj Group</td>
<td>18.80</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Maharastra Scooters Ltd</td>
<td>1975</td>
<td>Bajaj Group</td>
<td>7.80</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>TVS Motor Company Ltd</td>
<td>1982</td>
<td>T.V.S. Group</td>
<td>12.93</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Hero Honda Motors Ltd</td>
<td>1984</td>
<td>Hero (Munsals) Groups</td>
<td>10.54</td>
<td><strong>50.07</strong></td>
</tr>
</tbody>
</table>

* In 2004, Tata Motors Ltd purchased Daewoo Motors India Ltd.

Source: Prowess Database, 2005.
It is evident from Table 1.2 that Sample Company represents 87.24 percentage of market share in commercial vehicles, 89.76 percentage in passenger cars and multiutility vehicles and 50.07 percentage in two and three wheelers. Thus, the findings based on the occurrence of such representative sample may be presumed to be true representative of automobile industry in the country.

**Period of study**

The period 1995-96 to 2005-06 is selected for this study of Indian automobile industry. This 11 years period is chosen in order to have a fairly long, cyclically well balanced period, for which reasonably homogeneous, reliable and upto-date financial data would be available. Further, the span chosen for the study is the period of the beginning of liberalization measures introduced by the Government of India. Hence, the period 1995-96 to 2005-06 is an era of growth of corporate performance in the manufacturing sector, particularly automobile industry and has got genuine economic significance of its own.

**Source of data**

The study is mainly based on secondary data. The major source of data analysed and interpreted in this study related to all those companies selected is collected from “PROWESS” database, which is the most reliable on the empowered corporate database of Centre for Monitoring Indian Economy (CMIE). It contains a highly normalized database built on a sound understanding of disclosure in India on around 12,000 companies, which include public, private, co-operative and joint sector companies. The database provides financial statements, ratio analysis, fund flow, cash flow, product profiles, returns and risk on the stock market etc.,
Besides PROWESS database, relevant secondary data have also been collected from BSE Stock Exchange Official Directory, CMIE Publications, Annual Survey of Industry, Business Newspapers, Reports on Currency and Finance, Libraries of Various Research Institutions, through Internet etc. The study required variety of data; therefore, websites like http://indianfoline.com, and www.google.com have been comprehensively searched.

Data editing

For this study, major part of data comes from secondary sources. Data has been collected in raw form and then it is made suitable for analysis as per the methodology defined for the purpose.

Selection of variables

In this study at hand, a number of key financial variables have been identified for the purpose of analysis. The computation of these variables has been made for a period of 11 years. An epigrammatic explanation of the selected variable is outlined below.

Economic Value Added (EVA)

The Value based performance measure namely, EVA, introduced by Stern Stewart and company\textsuperscript{13}, is an incarnation of Residual Income concept. EVA model is based on the hypothesis that rational investor takes into account just two things; the cash to be generated over the life of a business; and the risk of the cash receipts. Stewart defined ‘EVA as an estimation of true economic profit, the amount by which earnings exceed or fall short of required minimum rate of return, investors could get by investing in other securities of comparable risk’. It is the net operating profit minus the appropriate charge for the opportunity cost of capital invested in an enterprise (both debt and equity).

Expressed as a formula, EVA for a given period can be written as:

\[
\text{EVA} = \text{NOPAT} - \text{COST OF CAPITAL EMPLOYED} = \text{NOPAT} - \text{WACC} \times \text{CE}
\]

Where,

- NOPAT - Net Operating Profit After Taxes but before financing costs
- WACC - Weighted Average Cost of Capital; and
- CE - Capital Employed

(or)

equivalently, if rate of return is defined as NOPAT/CAPITAL, this turns into a perhaps more revealing formula:

\[
\text{EVA} = (\text{RATE OF RETURN} - \text{COST OF CAPITAL}) \times \text{CAPITAL}
\]

Where,

- RATE OF RETURN - NOPAT/CAPITAL
- CAPITAL - Total balance sheet minus non-interest bearing debt in the beginning of the year.
- COST OF CAPITAL - [cost of equity x proportion of equity from capital] + [cost of debt x proportion of debt from capital x (1-tax rate)]

Cost of capital or weighted average cost of capital is the average cost of both equity capital and interest bearing debt.

**Cost of dept (k_d)**

Cost of debt refers to the average rate of interest the company pays for its debt obligations. Cost of debt (k_d) has been computed as:
\[ K_d = \frac{\text{Total interest expenses} \times (1-\text{Effective tax rate})}{\text{Beginning total borrowings}} \]

While calculating borrowing, all short-term as well as long-term borrowings have to be included, as all debts are interest bearing. Therefore, interest paid in the financial year has been considered as total interest expenses.

**Cost of equity \((K_e)\)**

To scribble down cost of equity \((k_e)\), Capital Asset Pricing Model (CAPM) has been used. This model holds that firms equity cost is the composition of risk free rate of return for a stock plus premium representing the volatility of share prices. According to this model, \((k_e)\) is the shareholders’ expected rate of return and this expected rate of return \((R_j)\) as follows:

\[
R_j = R_f + \beta (R_m - R_f)
\]

Where,

- \(R_j\) = Expected rate of return
- \(R_f\) = Risk free rate of return
- \(R_m\) = Market rate of return and
- \(\beta\) = Sensitivity of the share price in relation to the market index.

The interest rate of Government securities has been considered as a proxy for risk free rate of return. The market rate of return has been calculated by using Index Numbers of Security Prices (Bombay Stock Exchange) from year to year (on monthly average basis) base. The yearly return of the index numbers has been computed by using the following formula:

\[
R_m = \frac{[(\text{Index number for current year}-\text{Index number for previous year})]}{\text{Index number of previous year}} \times 100
\]
Beta (β) is the risk-free co-efficient which measures the volatility of a given script of a company with respect to volatility of market. It is calculated by comparing return on a share to return in the stock market. Mathematically, beta is the statistical measure of volatility. It is calculated as covariance of daily return on the stock market indices and the return on daily share prices of a particular company, dividend by variance of return on daily stock market indices. The Beta co-efficient has been calculated as follows:

\[ B_j = \frac{\text{COV}_{im}}{\sigma_m^2} \]

Where,

- \( B_j \) = is the Beta of the security in the question
- \( \text{COV}_{im} \) = Stands for co-variance between the return of security and return of market, and
- \( \sigma_m^2 \) = Stands for the variance of market return

**Market Value Added (MVA)**

While EVA measures shareholder value addition of firm in terms of its real economic performance, MVA measures market’s assessment of firm’s value. MVA thus measures value by the management over and above the capital invested in the company by investors.

\[ \text{Market Value Added (MVA)} = \text{Market value of company} - \text{Capital employed} \]

For a public listed company, its market value is calculated as market value of its equity (number of shares outstanding times their share price) plus book value of debt (since market value of debt is generally not available). Capital employed is effectively the book value of investments in the business made up of debt and equity.
Effectively, the formula becomes

\[
\text{Market Value Added (MVA)} = \text{Market value of equity} - \text{Book value of equity}
\]

These items have been obtained from balance sheet statement of companies. Data for the market price existing on the close of financial year has been collected from the ECONOMIC TIMES, CMIE Process and capitaline data bases.

**Data analysis**

The financial and statistical analysis approach plays a vital role in the financial environment. To enjoy the benefit of financial and statistical analysis, the researcher has collected, assembled and correlated the data, classified the data appropriately and condensed them into a related data series; stated the resultant information in a comprehensive form, text, tables and analysed and interpreted the reported data. The financial and statistical techniques applied in the study are given below:

It is well known that management is concerned with efficient performance, profitability and solvency. For this purpose it has to study certain specific ratios, because investors look upon certain ratios, which are concerned with an organization’s performance appraisal. For the purpose of this study, researcher has used ratios namely, operating profit margin, net profit margin, return on assets, return on net worth, return on capital employed, earnings per share, dividend per share, dividend payout ratio, current ratio, liquidity ratio, interest coverage ratio, debt equity ratio and fixed assets to net worth ratio.

The role of statistical tools is important in analysing the data and drawing inferences there from. In order to derive the open handed results
from the information collected through secondary data, various statistical tools like mean, standard deviation, variance, compound annual growth rate, tests of hypotheses have been accomplished through EXCEL, SX and SPSS software’s. Some of the statistical techniques particularly t-test and trend analysis have been used to interpret the sense of mathematical relationship amongst values of different variables so computed in the study.

In the present study, regression models have also been used to analyse the influence of independent variables on dependent variables in case of determinants of profitability and financial structure. The hypothesis has been tested separately on the sample. This can be done via the mechanism of the F test and t test.

Moreover, model recommended on the basis of the findings may prove to be a signpost in the field of corporate finance since the data and information are likely to be tested and analysed with the help of latest available quantitative techniques. Furthermore, researchers in particular are concerned with a change and likely contribute to the field of knowledge by their research so carried out. Similarly, it is expected that the findings of the present study would certainly become an addition to the present knowledge as far as Indian context is concerned. Hence, the scope of the present study is quite wide.

Limitations of the study

However, there are some limitations of the study, which are generally inherent in all such studies conducted at human level. The most important among them are:

(i). The study is based on secondary data obtained from the published annual reports and as such its finding depends entirely on the accuracy of such data.
(ii). Non-availability of the required eleven consecutive year’s financial data for the whole period of study has restricted the size of the sample. Therefore, the limitation of the small sample is also prevalent in this study.

(iii). The present study is largely based on ratio analysis which has its own limitations.

(iv). Statistical test used in the study to interpret the analysed data to generalize the findings of the study for the entire population has got their own limitations and result in the analysis is subject to same constraints as are applicable to statistical tools.

(v). The analysis of financial statement of business enterprise gives diagnostic indicators. The researcher, being an outside, external analyst, obviously has no access to internal data. Therefore, inside view of the organization cannot be characterized in the study.

(vi). The financial statement does not keep pace with the changing price level.

However, all these limitations do not, in any way, affect the worth of this research work.

Chapter scheme

In order to present this research work in a lucid way, it has been divided into seven chapters. The layout of these chapters is delineated below:

Chapter I is conceptual in nature and has been divided into several subparts, which includes introduction, performance appraisal through financial statements, meaning and concept of performance appraisal, tools and techniques of analysis for financial statement, scope of the study, statement of the problem, selection of automobile industry and significance of
the study. This chapter also encompasses the research methodology, objective of the study, hypotheses, research design, limitations of the study and chapter scheme.

Chapter II presents a brief review of related literatures on the subject.

Chapter III brings out the analysis of production and sales trend, capacity utilisation, sales and market share of the selected sectors of Indian automobile industry.

Chapter IV is committed to the profitability analysis, profitability trend and determinants of profitability of the selected sectors of Indian automobile industry.

Chapter V discusses the financial structure, determinants of financial structure, analysis of financial strength (short-term and long-term) and assessment of financial health using Altman’s Z score model of the selected sectors of Indian automobile industry.

Chapter VI is committed to analyse the Economic Value Added and Market Value Added (MVA) of the selected sectors of Indian automobile industry.

Chapter VII embodies the summary of conclusions and some workable recommendations for the smooth and efficient functioning of Indian automobile industry.

Towards the end of this research work, comprehensive bibliographies on the subject and some appendices have also been added.