

# “A Strategic Study on Fundamental Analysis of Automobile Industry (Commercial Vehicle) in India”

---

Dr S.M. Tariq Zafar\*

## ABSTRACT

*Amidst global dynamism companies' performance changes over time. The cyclical growth industries have shown the reflection of economic dynamics but they have been picking up speed in their growth rate overtime. Indian automobile industry has been playing an imperative role in this radical phase. This study is focused on the fundamental analysis of automobile industry from investments point of view. Fundamental Analysis helps to decide upon the right investment strategy in a particular sector through analysis of economy, industry and a company. With regard to automobile industry there are various factors which affect the performance of the company as well as shareholders' return. Success of an investor depends upon the criteria of selection opted by him to select the investment options that leads to creating wealth over the long term and earning maximum return with minimum risk. A genuine investor prefers to invest in that company which may endow maximum return with low degree of risk to him. This study aims to recognize the effect of various financial ratios on the shareholder's return and to evaluate the past performance, profitability position and the expected future performance of companies. For this purpose performance of five Indian automobile companies have been analyzed on the basis of their financial ratios and tools like ANOVA. This study will prove to be supportive for an investor in portfolio construction.*

*Key words: Investors, EPS, OPM, NPM, DER, ROA, PE, DPS, DPO, CR, ROI, BSE, ANOVA, M&HCV, GC LCV, FY, PC, GVW, CAGR, CV.*

### Indian Commercial Automobile Sector and Economy

Automobile industry is a wheel of economic fortune and plays an important role in economic development. Commercial Automobile sector is one of the largest industries in the global market and it influences the trade, commerce and industry in a major way. Commercial automobiles have various uses such as transportation of goods, shipping and handling of various commodities and so on. India produces approximately 2 million units annually and holds the tenth rank in the world on this ground. It is expected that in the near future Indian auto industry will become major automotive industry in the global market and it will touch 10 million units annual production mark. Indian automobile industry is involved in almost all functions of automobile industry such as designing, development, manufacturing, marketing, and sales. The product range comprises of automobile and the auto component sectors, and encompasses commercial

vehicles, multi utility vehicles, passenger cars, two-wheelers, three-wheelers, tractors and related auto components.

During the last decade, well-directed efforts have been made to provide a new look to the automobile policy for realizing the sector's full potential for the economy. The Government has moderated and lowered taxes and duties on automobiles, including customs duty. Further, FDI in 1993 and delicensing of auto industry gave new dimension of growth to this industry. Being integral part of the economy it has deep forward and backward linkages with the rest of the economy and has strong multiplier effect. Removal of the restrictive environment, abolition of licensing, removal of quantitative restrictions and initiatives to bring the policy framework in consonance with WTO requirements, have set the industry in a progressive track and has significantly helped restructuring, and enabled industry to adopt new emerging technologies,

---

\*Associate Professor, Dehrdoon Institute of Technology, Dehradun

aligning itself with the global development and also to realize its potential in the country. The liberalization policies infused competition which has ultimately resulted in modernization in line with the global standards as well as in substantial cut in prices. Strategic and aggressive marketing by the auto finance companies boosted automobile demand, especially from the population in the middle income group. Industry friendly government decision of reducing tariff on auto components to 12.5% resulted in increased number of multinationals establishing their bases in India, alongwith export markets looking up and due to these developments. India became one of the most important growth oriented markets for the global commercial-vehicle industry.

The automobile production in the sub-continent has been growing considerably at the growth rate of 18.53% per annum from 2002-03 onwards, with the total vehicle production standing at a mammoth 1,00,31,296 nos. in 2005-06. The export of commercial vehicles has gone up to 72% breaking all previous records. In the period from 2000 to 2007 the market for commercial vehicles has more than tripled to 480,000 units. The domestic sales of the industry grew faster in FY08 as compared to its growth in FY07. In 2008 the production of commercial vehicles over 3.5 t will be around 305,000 units, which is 45 percent above the figure for 2005. M&HCV GC segment domestic sales declined by 5.88% in FY08. The Light Commercial Vehicles Goods Carrier (LCV GC) segment managed to clock a decent growth of 11.65%. The Passenger Carriers (PC) segment registered a strong growth of 26.51% on the back of ordering by both, private players and State Transport Undertakings (STUs).

India's growing economy with scant resources impacted auto industry and resulted in low penetration levels in all three segments of the industry, namely commercial vehicles, passenger cars and two wheelers. Presently in India there are 13 manufacturers of passenger cars and multi utility vehicles, 7 manufacturers of commercial vehicles, 11 of two or three wheelers and 10 of tractors, besides 4 manufacturers of engines. The industry has an investment of a sum exceeding US\$ 10 billion and it

employs 500,000 people directly and more than 10 million people indirectly which is comparatively insufficient to tap its unexplored potential to foster the growth of the economy. It has contributed relatively low (nearly 5 per cent) share of industrial output in economic growth rate as compared to the 8-10 per cent range in other developing countries such as Mexico and Brazil and much higher (15-17 per cent range) in developed countries such as the United States and Germany. Even the share of employment is low at 2.5 per cent for the auto industry in India compared to 3-7 per cent in developing countries and around 15 per cent in mature economies. It is expected that in the short term, the industry growth is expected to be weighed down by the adverse macro-economic environment. In FY09, it is expected that the goods carrier (GC) unit sales will grow between 4-5% while in tonnage terms, the segment is likely to see the growth of 2-3%. It is expected that the GC segment expected to register a 5-year Compounded Annual Growth Rate (CAGR) of 6-7.5% in tonnage sales. The passenger carrier (PC) segment is expected to grow between 6-8%. Due to uncontrolled and political recession commercial vehicle (CV) industry is expected to close FY09 with negative growth rates but expected to maintain its long term 5 year CAGR of 6-8% till FY13.

#### Literature Review

A survey of literature indicates that an extensive research has been carried out in the field of Fundamental Analysis by various researchers, *Mohamed Azim, Mark P Bauman, John Colnan, Cristina Abad Sten A., Jim Berg, Jon Lynch, Frank Shostak Kotrappa, Dominic Crag, Ben McClure, Ehab Mohamed and Thore Joaquina Laffarga*. This revealed important facts which became paramount in this arena. However most of the studies focused on advance countries like UK, USA, and Germany etc. The critical revelations of these studies shows that no organized and systematic study has yet been made to test the authenticity and validity of these important concepts in the context of the industrial undertakings operating in under-developed and developing nations and thus the present paper seeks to make a humble beginning in this respect. *John Colnan (1994)*, in his

study provides some brief pointers on what information to look for and how to make sense of what is available, *Jim Berg (1999)* examined that fundamental analysis looks at the fundamental issues that drive the value of a particular company. These issues include its financial position, its industry sector, and the current economic environment. *Mark P Bauman (1996)* verified its descriptive validity regarding the mapping of accounting numbers into stock prices. *Cristina Abad Sten A. and Thore Joaquina Laffarga (1998)* study revealed a predictive information link tying current financial data to future earnings, and a valuation link tying future earnings to firm value. Jon Lynch, in his study, explains the difference between the fundamental and technical analysis- the two most common methods adopted to conduct research on the performance of stock markets. *Frank Shostak (1999)* explains that the stock market doesn't have a life of its own. The success or failure of investment in stocks depends ultimately on the same factors that determine success or failure of any business. *Kotrappa (2000)* stated that the success of a corporation greatly depends upon sound financing. When the original financing has been sound, a co-operation has less fear for the future, provided it is given by a competent management, *Dominic Crag (2002)* examines financial trading from the aspect of security selection. There are two main methodologies used, namely, fundamental analysis and technical analysis, *Ben McClure (2004)* revealed that each industry has differences in terms of its customer base, market share among firms, industry-wide growth, competition, regulation and business cycles, *B. Vanstone, G. Finnie, and C. Tan (2004)* examine financial trading from the aspect of security selection. In practice, it is unrealistic for a financial trader to participate in the full market of tradable securities, and a selection mechanism must be employed to reduce the number of possible securities competing for investment capital. Essentially, there are two main methodologies used, namely, Fundamental Analysis, and Technical Analysis, *Larson and Holz (2005)* revealed that fundamental analysis studies reasons of price changes at the macroeconomic level and represents analysis of economic and political conditions in countries or separate industries, *Chung Yan Yee and Charles Yeah (2006)* suggest that there is no

significant correlation between firm size and profitability. Large firms, which are endowed with greater resources and prowess, are not guaranteed to be more profitable. However, firm size has some influence on generic strategies; as large firms tend to adopt a broadly targeted or a non related diversification strategy, *You-Shyang Chen (2007)* study explains the forecasts revenue growth rate (RGR) of firms in stock trading systems using rough set theory. It is a very important instrument for investors that correctly predict future growing firms from data of fundamental analysis in trading systems, *Ehab Mohamed; Mohamed Azim (2007)* examines the extent to which the disclosed fundamental financial information is transparent to shareholders in Egypt's stock market. The speed of adjusting market-to-book ratio can fairly be used to examine the issue of transparency and concluded that the disclosed financial information can fairly be used in the course of fundamental analysis in the Egyptian stock market, *Manual Garcia (2008)* provides evidence on the extent to which the quality of human resources is related to the value of accounting variables that are used in fundamental analysis due to their perceived usefulness as proxies for investors' expectations on the firm's future profitability and growth in both, earnings and shareholders' equity.

#### Objective and Methodology:

This study is an attempt to throw a light on the growth of commercial automobile industry in India by analyzing economic and industrial factors affecting the growth of the industry. The core objective of this study is to evaluate the past performance and the expected future performance of companies, to analyze the profitability position of the companies and to analyze the various ratios of the past five years (2004-2008) of sample companies.

The present study adopts analytical and descriptive research design with convenience sampling based on the secondary data collected from the annual reports and the balance sheet, published by the companies' respective websites. Top five Indian Automobile (Commercial) Companies are chosen for the study on the basis of Companies listed on Bombay Stock Exchange (B.S.E.).

Tools for analysis:

**Ratio Analysis:** The financial ratios which have been used for comparative analysis of five automobile companies are : Earning Per Share (EPS), Operating Profit Margin (OPM), Net Profit Margin (NPM), Debt Equity Ratio (DER), Return on Assets (ROA), Dividend Per Share(DPS), Dividend Pay Out(DPO), Current Ratio(CR), Return On Investment(ROI) and Price Earning Ratio(PE).

**Analysis of Variance (ANOVA):** The statistical tool that is used for testing hypothesis and interpreting the results is one-way Analysis of Variance (ANOVA).

### Company Analysis And Interpretation

Fundamental analysis includes the company analysis which is a scientific approach to estimate and analyze the intrinsic worth of the company. It effectively and minutely analyzes the basic fundamental criteria of the company like balance sheet studies, sales, and profits. It pays positive attention to a company's debt-equity ratio, profit margins, dividend payout, earning per share, interest, asset and dividend coverage, market share, sales penetration, product and market innovation and the promoters track record etc. It is strategically conservative and non-speculative approach of evaluating equity shares on value based method and consists of three phases: economic analysis, industry analysis and company analysis. We have analyzed five top companies in the field of Automobile (Commercial) sector on the basis of company analysis. In company analysis under the fundamental analysis the comparative balance sheet, profit & loss account of each company are to be prepared for comparative analysis. Five companies are as given below:-

1. Tata Motors.
  2. Ashok Leyland.
  3. Mahindra & Mahindra.
  4. Eicher Motors.
  5. Escorts Limited.
1. Operating Profit Margin (OPM)

Operating profit margin indicates how effective

a company is at controlling the costs and expenses associated with their normal business operation. This ratio is found out using the following formulae and in percentage terms:

$$\text{Operating profit margin} = \frac{\text{Operating profit}}{\text{Total revenues}} \times 100$$

Table: 1 Operating Profit Margin (in %)

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	13.2580	11.4203	10.4729	9.1880	8.3969
2005	11.6288	9.9113	10.9009	7.1065	- 4.0662
2006	10.6848	10.0818	10.7114	4.5035	- 8.1770
2007	9.7003	9.3245	11.4523	6.3841	5.2341
2008	10.4422	10.0907	10.2353	5.8594	5.7905
AVG	11.1427	10.1657	10.7546	6.6083	1.4357

Source: Computed from the data retrieved from [www.money.rediff.com](http://www.money.rediff.com)

As it is observed in the Table 1, among all the companies, Tata Motors sustained the highest operating profit margin amongst all other companies during the study period followed by Mahindra & Mahindra, which has registered a reasonably higher margin during the period of review. OPM of Tata Motors i.e. 11.1427 is more than others. Amongst all Escorts Ltd. has the lowest OPM i.e. 1.4357. This suggests that Tata Motors is the most efficient company in terms of operating profit margin.

The operating profit margin of the companies is compared and tested by taking the following hypothesis.

### Hypothesis Testing

Ho: OPM positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

Ha: OPM positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 2.

Table 2: One-way ANOVA for Operating Profit Margin

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F-limit
Between Groups	335.900	4	83.975	7.393	2.87
Within Groups	227.180	20	11.359		
Total	563.080	24			

Note: One-way ANOVA has been calculated by SPSS.

**Inference:** Since the calculated value of F is 7.393 which is more than the table value of 2.87 (CV > TV at 5% significance level), the null hypothesis is rejected and hence it is concluded that the operating profit margin position of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. does differ significantly.

## 2. Net Profit Margin (NPM)

Net profit margin indicates how much a company is able to earn after all direct and indirect expenses to every rupee of revenue. This ratio is calculated using the following formula and expressed in percentage terms:

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Total revenues}} \times 100$$

Table 3 : Net Profit Margin (in %)

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	6.2199	5.5981	7.0674	2.4504	0.7752
2005	7.1830	6.0726	7.7740	2.9486	3.0395
2006	7.6107	6.1068	10.5339	13.1492	3.0104
2007	7.1759	6.0369	10.7686	3.1118	1.0719
2008	7.0600	5.8866	9.7554	2.8416	-0.307
AVG	7.0499	5.9402	9.1799	4.9003	1.5178

Source: Computed from the data retrieved from www.money.rediff.com

As shown in Table 3, the NPM of Tata Motors and Ashok Leyland showed almost similar trends during the study period. Mahindra & Mahindra has outperformed all the other companies in terms of Net Profit Margin. Whereas the NPM of Mahindra & Mahindra (9.1799) is substantially higher than that of other companies at every year during the study period. On an average Escorts Ltd. generated NPM of 1.5178 which is lowest among the five companies. This suggests that Mahindra & Mahindra is the most efficient company in terms of Net Profit Margin.

The NPM positions of sample companies are compared and tested taking the following hypothesis.

### Hypothesis Testing

**Ho:** NPM positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

**Ha:** NPM positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 4.

Table 4: One-way ANOVA for Net Profit Margin

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F-limit
Between Groups	160.589	4	40.147	7.557	2.87
Within Groups	106.258	20	5.313		
Total	266.847	24			

Note: One-way ANOVA has been calculated by SPSS.

**Inference:** Since the calculated value of F is 7.557 which is more than the table value of 2.87 (CV > TV at 5% significance level), the null hypothesis is rejected and hence it is concluded that the net profit margin positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

### 3 Earning Per Share (EPS)

Earning per share is the measure of the company's ability to generate after tax profits per equity share. This ratio is computed with the help of the following formula and expressed in percentage terms:

$$EPS = \frac{\text{Earnings after taxes and preferred dividends}}{\text{Total number of equity shares outstanding}} \times 100$$

Table 5: Earnings Per Share

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	22.9585	16.2769	30.0442	16.8108	1.1906
2005	34.1507	2.1799	45.9184	20.9475	3.3282
2006	39.9358	2.6795	36.7224	77.1980	5.4117
2007	49.6502	3.3557	44.8841	21.8054	2.6304
2008	52.6303	3.5278	46.1520	22.4425	-0.7695
AVG	39.8651	5.6040	40.7742	31.8408	2.3583

Source: Computed from the data retrieved from www.money.rediff.com

As shown in the Table 5, the EPS of Tata Motors and Mahindra & Mahindra showed similar trend during the study period. The average EPS of Mahindra & Mahindra is greater than all other companies during the entire study period. EPS of Mahindra & Mahindra was substantially higher than Ashok Leyland, Eicher Motors and Escorts Ltd. On an average Mahindra & Mahindra earned EPS of 40.7742 which is highest and Escorts Ltd. has EPS 2.3583 which is least among the five companies. This suggests that Mahindra & Mahindra is the most efficient company in generating earning per share.

The EPS positions of sample companies are compared and tested by taking the following hypothesis.

#### Hypothesis Testing

Ho: EPS positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. does not differ significantly.

Ha: EPS positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd

differ significantly.

For hypothesis testing the details are shown in Table 6.

Table 6: One-way ANOVA for Earning Per Share

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F - limit
Between Groups	7001.467	4	1750.367	9.898	2.87
Within Groups	3536.927	20	176.846		
Total	10538.394	24			

Note: One-way ANOVA has been calculated by SPSS.

Inference: Since the calculated value of F is 9.898 which is more than the table value of 2.87 (CV > TV at 5% significance level), the null hypothesis is rejected and hence it is concluded that the earning per share position of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

### 4. Dividend Per Share (DPS)

Dividend per share is similar to earnings per share. DPS shows how much the shareholders were actually paid by the way of dividends. The DPS is computed by the following formula and expressed in percentage terms:

$$\text{Dividend per share} = \frac{\text{Dividend Paid}}{\text{Total number of equity shares outstanding}} \times 100$$

Table 7: Dividend Per Share Ratio

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	7.9927	7.5000	9.0002	4.9152	0.9996
2005	12.5000	1.0000	13.5076	4.0008	0.9996
2006	13.0067	1.3080	10.4529	4.0008	
2007	15.0023	1.4999	11.8567	28.9990	
2008	15.0045	1.5016	11.8211	5.0011	
AVG	12.7008	2.5620	11.3277	9.3834	0.9996

Source: Computed from the data retrieved from www.money.rediff.com

As shown in the Table 7, the DPS of Tata Motors and Mahindra & Mahindra showed almost similar trend during the study period. The average DPS of Tata Motors is greater than all other companies during the entire study period. On an average Tata Motors paid DPS of 12.7008 which is the highest and Escorts Ltd. paid DPS of 0.9996 that is the lowest. This suggests that Tata Motors is the most efficient company in terms of payment of dividends.

The DPS positions of sample companies are compared and tested by taking the following hypothesis.

Hypothesis Testing

Ho: DPS positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

Ha: DPS positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 8.

Table 8: One-way ANOVA for Dividend Per Share Ratio

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F - limit
Between Groups	419.733	4	104.933	3.203	2.96
Within Groups	556.891	17	32.758		
Total	976.624	21			

Note: One-way ANOVA has been calculated by SPSS.

Inference: Since the calculated value of F is 3.203 which is more than the table value of 2.96 (CV > TV at 5% significance level), the null hypothesis is rejected and hence it is concluded that the dividend per share position of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

5. Dividend Pay Out Ratio (DPO)

Dividend pay out is the measure of the

dividends paid by the company rather than retained by the company. The ratio is computed by the following formula and expressed in percentage terms:

$$\text{Dividend pay out ratio} = \frac{\text{Dividend per share}}{\text{Earning per share}} \times 100$$

Table 9: Dividend Pay Out Ratio

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	34.8138	46.0791	29.9564	29.2385	83.9353
2005	36.6024	45.8729	29.4166	19.0994	30.0333
2006	32.5689	48.8177	28.4646	5.1862	
2007	30.2118	44.7001	26.4164	132.9905	
2008	28.5093	42.5667	25.6133	22.2839	
AVG	32.5412	45.6073	27.9735	41.7590	56.9934

Source: Computed from the data retrieved from www.money.rediff.com

As shown in the Table 9, the DPO ratios of Tata Motors, Ashoka Leyland and Mahindra & Mahindra showed almost similar trend during the study period. On an average DPO ratios of ESCORTS Ltd. that is 56.9934, is the highest. This suggests that ESCORTS Ltd. is the most efficient company in generating dividend pay out ratio?

The DPO ratios of sample companies are compared and tested by taking the following hypothesis.

Hypothesis Testing

Ho: DPO ratios of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

Ha: DPO position of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 10.

Table 10: One-way ANOVA for Dividend Pay Out Ratio

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F - limit
Between Groups	1719.402	4	429.851	.597	2.96
Within Groups	12242.47	17	720.145		
Total	13961.87	21			

Note: One-way ANOVA has been calculated by SPSS.

**Inference:** Since the calculated value of F is .597 which is less than the table value of 2.96 (TV > CV at 5% significance level), the null hypothesis is accepted and hence it is concluded that the dividend pay out position of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. does not differ significantly.

#### 6. Price Earning Ratio (PE)

The price earning ratio highlights the connection between the share price and company's performance. This ratio moves either side only when price and profit get disconnected. The ratio is calculated by the following formula and is expressed in terms of times:

$$\text{Price earning ratio} = \frac{\text{Share price at given time}}{\text{Earning per share}}$$

Table 11: Price Earning Ratio

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	21.1555	15.5803	15.4622	13.7828	52.5362
2005	12.1213	9.6333	10.8268	14.7989	24.4279
2006	23.3525	15.0217	17.0768	3.9561	16.8338
2007	14.6575	11.4584	15.9366	10.6121	43.9095
2008	11.8458	10.0064	15.0730	11.1596	-111.44
AVG	<b>16.6265</b>	<b>12.3400</b>	<b>14.8751</b>	<b>10.8619</b>	<b>5.2534</b>

Source: Computed from the data retrieved from www.money.rediff.com

As shown in the Table 11, the PE of Tata Motors, Ashok Leyland and Mahindra & Mahindra showed almost similar trends during the study period. The average PE of Tata Motors is greater than all other companies during the entire study period. On an average Tata Motors PE of 16.6265 is the highest and Escorts Ltd. PE of 5.2534 is the lowest. This suggests that Tata Motors is the most efficient company in generating price earning.

The PE positions of sample companies are compared and tested by taking the following hypothesis.

#### Hypothesis Testing

Ho: PE positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

Ha: PE positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 12.

Table 12: One-way ANOVA for Price Earning Ratio

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F - limit
Between Groups	382.989	4	95.747	.106	2.87
Within Groups	18087.807	20	904.390		
Total	18470.797	24			

Note: One-way ANOVA has been calculated by SPSS.

**Inference:** Since the calculated value of F is 0.106 which is less than the table value of 2.87 (CV < TV at 5% significance level), the null hypothesis is accepted and hence it is concluded that the price earning positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

#### 7. Return on Net Worth (RONW)

Return on net worth of a company measures the ability of the management of the company to generate



returns on capital invested. The ratio is calculated by the following formula and is expressed in percentage terms:

$$\text{Return on net worth} = \frac{\text{Net profit}}{\text{Net worth}} \times 100$$

**Table 13: Return On Net Worth**

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	22.5736	18.8570	19.8016	17.9950	1.1032
2005	30.0485	22.6769	25.6599	24.4242	3.0222
2006	27.7439	23.5735	29.6007	48.7360	7.5030
2007	27.9580	23.7361	30.1802	14.8197	3.5186
2008	25.9652	22.0686	25.4373	13.7565	-0.9953
AVG	<b>26.8578</b>	<b>22.1824</b>	<b>26.1359</b>	<b>23.4962</b>	<b>2.8304</b>

Source: Computed from the data retrieved from www.money.rediff.com

As shown in the Table 13, the RONW of Tata Motors, Ashok Leyland and Mahindra & Mahindra showed almost similar trend during the study period. The average RONW of Tata Motors is greater than all other companies during the entire study period. RONW of Tata Motors is substantially higher than Ashok Leyland, Mahindra & Mahindra. On an average Tata Motors has 26.8578 RONW and Escorts Ltd. has 2.8304 RONW, the lowest. Thus the analysis reveals that Tata Motors was most efficient company in generating return on net worth.

The RONW positions of sample companies are compared and tested by taking the following hypothesis.

**Hypothesis Testing**

Ho: RONW positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

Ha: RONW positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 14.

**Table 14: One-way ANOVA for Return on Net Worth**

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F - limit
Between Groups	1995.252	4	498.813	10.042	2.87
Within Groups	993.457	20	49.673		
Total	2988.708	24			

Note: One-way ANOVA has been calculated by SPSS.

**Inference:** Since the calculated value of F is 10.042 which is more than the table value of 2.87 (CV > TV at 5% significance level), the null hypothesis is rejected and hence it is concluded that the return on networth positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

**8. Current Ratio (CR)**

Current Ratio is the measure of current assets to current liabilities of the company. The ratio is computed by the following formula and is expressed in terms of times:

$$\text{Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

**Table 15: Current Ratio**

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	0.7225	1.4445	0.9951	1.0149	1.5136
2005	0.9973	1.6123	1.1898	0.9495	1.6911
2006	1.2438	1.3680	1.2443	1.0995	1.3202
2007	1.2400	1.2917	1.3723	1.0570	1.2460
2008	0.8962	1.0856	1.1002	1.0753	1.2393
AVG	<b>1.0200</b>	<b>1.3604</b>	<b>1.1803</b>	<b>1.0392</b>	<b>1.4020</b>

Source: Computed from the data retrieved from www.money.rediff.com

As shown in the Table 15, the CR of Ashok Leyland, Mahindra & Mahindra, EICHER Motors & Escorts Ltd. showed almost similar trend during the study period. The average CR of Escorts Ltd is greater than all other companies during the entire study period. On an average, ESCORTS Ltd has CR of 1.4020 which is the highest, and Tata Motors has CR of 1.0200 which is the least. This suggests that Escorts Ltd is most efficient company in terms of current ratio.

The CR positions of sample companies are compared and tested by taking the following hypothesis.

**Hypothesis Testing**

Ho: CR positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. does not differ significantly.

Ha: CR positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 16.

Table 16: One-way ANOVA for Current Ratio

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F-limit
Between Groups	.626	4	.156	5.192	2.87
Within Groups	.603	20	.030		
Total	1.229	24			

Note: One-way ANOVA has been calculated by SPSS.

**Inference:** Since the calculated value of F is 5.192 which is more than the table value of 2.87 (CV > TV at 5% significance level), the null hypothesis is rejected and hence it is concluded that the current ratio positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

**9. Return on Assets (ROA)**

Return on assets is the indicator about how profitable a company is. The ratio is calculated by the following formula and is expressed in terms of times:

$$\text{Return on assets} = \frac{\text{Earnings before interest and taxes}}{\text{Net operating assets}}$$

Table 17: Return on Assets

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	0.0568	0.0597	0.0351	-0.0101	0.0637
2005	0.0526	0.0786	0.0500	-0.0396	0.0735
2006	0.0626	0.0815	0.0358	-0.1233	0.0688
2007	0.0749	0.1030	0.0427	-0.0163	0.0782
2008	0.0704	0.0770	0.0423	0.0046	0.0624
AVG	<b>0.0635</b>	<b>0.0800</b>	<b>0.0412</b>	<b>-0.0369</b>	<b>0.0693</b>

Source: Computed from the data retrieved from [www.money.rediff.com](http://www.money.rediff.com)

As shown in the Table 17, the ROA of TATA MOTORS, ASHOK Leyland and MAHINDRA & MAHINDRA showed almost similar trend during the study period. The average ROA of ASHOK Leyland is greater than all other companies during the entire study period. ROA of ASHOK Leyland with value of 0.0800 is highest and ESCORTS Ltd. with ROA value of -0.0369 is the least among the companies. This suggests reveals that ASHOK Leyland is the most efficient company in generating return on assets

The ROA positions of sample companies are compared and tested by taking the following hypothesis.

**Hypothesis Testing**

Ho: ROA positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

Ha: ROA positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 18.

Table 18: One-way ANOVA for Return on Assets

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F - limit
Between Groups	.044	4	.011	18.547	2.87
Within Groups	.012	20	.001		
Total	.056	24			

Note: One-way ANOVA has been calculated by SPSS.

**Inference:** Since the calculated value of F is 18.547 which is more than the table value of 2.87 (CV > TV at 5% significance level), the null hypothesis is rejected and hence it is concluded that the return on assets position of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

#### 10. Debt Equity Ratio (DER)

Debt equity ratios shows how much a company is leveraged (in debt), by comparing what is owed to and what is owned. The ratio is calculated by the following formula and is expressed in terms of times:

$$\text{Debt equity ratio} = \frac{\text{Total Debt}}{\text{Total equity}}$$

Table 19: Debt Equity Ratio

Year	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
2004	0.3509	0.4862	0.4146	1.0006	0.9218
2005	0.6070	0.7701	0.5269	0.5341	1.0261
2006	0.5329	0.4983	0.3051	0.3893	1.2830
2007	0.5858	0.3422	0.4621	0.4727	1.0933
2008	0.8038	0.4173	0.5964	0.4316	0.6879
AVG	<b>0.5761</b>	<b>0.5028</b>	<b>0.4610</b>	<b>0.5657</b>	<b>1.0024</b>

Source: Computed from the data retrieved from www.money.rediff.com

As shown in the Table 19, the average DER of Escorts Ltd. is greater than all other companies during the entire study period. DER of Escorts Ltd. is 1.0024 which is highest and Mahindra & Mahindra with 0.4610 DER is the least. This suggests that Mahindra & Mahindra was most efficient company in terms of

debt equity ratio.

The DER positions of sample companies are compared and tested by taking the following hypothesis.

#### Hypothesis Testing

Ho: DER positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. do not differ significantly.

Ha: DE positions of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

For hypothesis testing the details are shown in Table 20.

Table 20: One-way ANOVA for Debt Equity Ratio

Source of Variation	Sum of Squares	Df	Mean Square	F	5% F - limit
Between Groups	1.020	4	.255	6.428	2.87
Within Groups	.793	20	.040		
Total	1.813	24			

Note: One-way ANOVA has been calculated by SPSS.

**Inference:** Since the calculated value of F is 6.428 which is more than the table value of 2.87 (CV > TV at 5% significance level), the null hypothesis is rejected and hence it is concluded that the debt equity ratio of Tata Motors, Ashok Leyland, Mahindra & Mahindra, Eicher Motors & Escorts Ltd. differ significantly.

#### Findings of The Study

- ? Operating profit margin of TATA MOTORS (11.1427) is top in the period 2004-08 with maximum average OPM over the period 2004-08. Escorts Ltd. has least OPM (1.4357) among all the players.
- ? Net profit margin of Mahindra & Mahindra (9.1799) is the highest and that of Escorts Ltd. (1.5178) is the least.
- ? Earning per share of Mahindra & Mahindra (40.7742) is the highest and that of Escorts Ltd. (2.3583) is the least.

- ? Dividend per share of Tata Motors (12.7008) is the highest and that of Escorts Ltd. (0.9996) is least.
- ? Dividend pay out ratio of Escorts Ltd. (56.9934) is the highest and that of Mahindra & Mahindra (27.9735) is least.
- ? Return on net worth of Tata Motors (26.8578) is the highest and that of Escorts Ltd. (2.8304) is the least.
- ? Current ratio of Escorts Ltd. (1.4020) is the highest and that of Tata Motors (1.0200) is the least.
- ? Return on assets of Mahindra & Mahindra (0.0800) is the highest and that of Eicher MOTORS (-0.0369) is the least.
- ? Price earning ratio of Tata Motors (16.6265) is the highest and that of Escorts Ltd. (5.2534) is least.
- ? Debt equity ratio of Escorts Ltd. (1.0024) is the highest and that of Mahindra & Mahindra (0.4610) is least.

Conclusion

Table 21: Operating Profit Margin

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	11.1427	10.1657	10.7546	6.6083	1.4357
<b>RANK</b>	1	3	2	4	5

- ? The five year Operating Profit Margin ratio of Tata Motors is significantly higher (11.1427) than other four sample companies and lies on the top position.
- ? Tata Motors did better in share market when compared to other four companies.

Table 22: Net Profit Margin

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	7.0499	5.9402	9.1799	4.9003	1.5178
<b>RANK</b>	2	3	1	4	5

- ? *Average of net profit margin over the past 5-10 years can give a better idea of growth potential in future.* Mahindra & Mahindra has registered highest NPM of (9.1799) and Escorts Ltd. registered significantly the lowest NPM of (1.5178).

Table 23: Earning Per Share

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	39.8651	5.6040	40.7742	31.8408	2.3583
<b>RANK</b>	2	4	1	3	5

- ? Mahindra & Mahindra which out performed other companies in terms of EPS lies in the top position. Escorts Ltd. (2.3583%) registered lowest among the five sample companies. Thus, it was found that Mahindra & Mahindra to be the most efficient company in controlling indirect expenses when compared to other sample companies.

Table 24: Dividend Per Share

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	12.7008	2.5620	11.3277	9.3834	0.9996
<b>RANK</b>	1	4	2	3	5

- ? On an average TATA MOTORS generated DPS

of (12.7008), highest among all. . ESCORTS Ltd (0.9996) has registered lowest DPS among the five sample companies.

**Table 25: Dividends Pay Out**

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	32.5412	45.6073	27.9735	41.7590	56.9934
<b>RANK</b>	4	2	5	3	1

? DPO of Escorts Ltd (56.9934) was the highest.

**Table 26: Return On Net Worth**

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	26.8578	22.1824	26.1359	23.4962	2.8304
<b>RANK</b>	1	4	2	3	5

? Tata Motors which out performed other companies in terms of Return on Net Worth and lies on the top position. Escorts Ltd (2.8304) registered lowest among the five sample companies.

**Table 27: Current Ratio**

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	1.0200	1.3604	1.1803	1.0392	1.4020
<b>RANK</b>	5	2	3	4	1

? The average Current Ratio of Escorts Ltd and Ashok Layland is near to the standard of 1.33 and others are below the average so these companies should take care of their current assets.

**Table 28: Return On Assets**

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	0.0635	0.0800	0.0412	-0.0369	0.0693
<b>RANK</b>	2	3	1	4	5

? The five year return on assets of Ashok Leyland was significantly higher (0.0800) than other four sample companies and lies In the top position. Mahindra & Mahindra did better in share market when compared to other four companies.

**Table 29: Price Earning Ratio**

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	16.6265	12.3400	14.8751	10.8619	5.2534
<b>RANK</b>	1	3	2	4	5

? The five year Price Earning Ratio of Tata Motors was significantly higher (16.6265) than other four sample companies and lies in the top position.

**Table 30: Debt Equity Ratio**

Com-pany	Tata Motors	Ashok Layland	Mahindra & Mahindra	Eicher Motors	Escorts Ltd.
<b>AVER AGE</b>	0.5761	0.5028	0.4610	0.5657	0.5656
<b>RANK</b>	1	4	5	2	3

? The five year average Debt Equity Ratio for Tata Motors was significantly higher (0.576) than the other companies studied.

Fundamental analysis of a business involves analyzing its income statement, financial statements and health, its management and competitive advantages, and

competitors and markets. The analysis is performed on historical and present data, but with the goal to make financial projection.

#### Recommendations

Bast on analysis of Automobile (commercial) Industry the following are the worth considerations :

- ? The investors who are risk averse may invest their capital in Mahindra & Mahindra and Tata Motors as they have the highest portion of self-owned funds in their capital structure.
- ? The investors with long term perspective of investment should invest their riches in the company which is registering high profit margins constantly. Tata Motors and Mahindra & Mahindra resolves this rationale of the investors.
- ? An investor might analyze the resources and capabilities within each company to identify those companies which are capable of creating and maintaining a competitive advantage.
- ? Escorts Ltd. has registered negative earning capacity in a year, high fluctuation in performance and negative yield over its assets, therefore investment in the same should be avoided.
- ? Fundamental analysis is good for long-term investments based on study of long-term trends. The ability to identify and predict long-term economic, demographic, technological or consumer trends can benefit the potential investors who pick the right industry groups or companies like Tata Motors and Mahindra & Mahindra.
- ? An investor should be familiar with the key revenue and profit drivers behind a company. Earnings and earnings expectations can be potent drivers of equity prices. For example if operating profit margin is higher it does not necessarily mean that it is good rather it may also due to higher \idle stock

On the basis of the fundamental study undertaken two companies Tata Motors and

Mahindra & Mahindra out of the five sample companies are better investment destinations.

#### References

Bus and Special Vehicles Expo 2009

Charles Savage and Ken Stand field (2006), *Intangible Finance Standards: Advances in Fundamental Analysis & Technical Analysis*, San Diego: Harcourt, Brace, and Jovanovich.

Cristina Abad Sten A. Thore Joaquina Laffarga (1998), "Fundamental analysis of stocks by two-stage DEA".

David Reich (Privately Held; 51-200 employees; Investment Management industry) "Conducted market-moving fundamental research on the global wireless telecommunications industry" June 2004 June 2006 (2 years 1 month)

Enhancing Security Selection in the Australian Stock Market Using Fundamental Analysis and Neutral Networks (2004) by Vanstone B, Finnie G and Tan C.

Ehab Mohamed, Mohamed Azim (2007), is corporate fundamental analysis is transparent to shareholders in transitional markets? Head of Telecom Industry Syndication, Iran students News Agency, 2005.

Fundamental Analysis and human capital (2008) by Manual Garcia. [http://www.ebookee.com.cn/Solutions-Manual-Test-Bank-4\\_309143.html](http://www.ebookee.com.cn/Solutions-Manual-Test-Bank-4_309143.html)

Hiroshi Morita and Necmi Avkiran (2008), "Predicting Telecom Stock Performance with Fundamental Relative Analysis", Available at SSRN: <http://ssrn.com abstract=568156> (Journal of Fundamental Analysis).I

Intangible Finance Standards: Advances in Fundamental Analysis & Technical Analysis (2006) by Charles Savage and Ken Stand field. [www.bharatbook.com/detail.asp?id=50044](http://www.bharatbook.com/detail.asp?id=50044)

Indian commercial Vehicle Industry for Indian Customers PDF Format, Published: 2008.

- [www.bharatbook.com/detail.asp?id=50044](http://www.bharatbook.com/detail.asp?id=50044)
- Jeffrey J. Quirin, Kevin T. Berry & David O'Brien, "A Fundamental Analysis Approach to Oil and Gas Firm Valuation", vol. 17, no. 4, 302-317.
- Jr. Associate Sanford C. Bernstein & Co. (Public Company; 201-500 employees; Investment Management industry) April 2002 June 2004 (2 years 3 months)
- Martin Glaum (2006), "Valuation of telecommunications companies by financial analysts" vol. 17, no.1, 80-83.
- Punithavathy Padian (2007), "Security Analysis and Portfolio Management", New Delhi: Vikas Publishing House Pvt Ltd.
- Research and Markets: Examine the Fundamental Analysis for Nanobiotechnology Applications (2005) by Laura Wood. [www.reuters.com/.../idUS39514+06-Feb-2009+BW20090206](http://www.reuters.com/.../idUS39514+06-Feb-2009+BW20090206)
- Ravi.M.Kishore (2008), "Financial Management". Taxmann Publications,
- You-Shyang Chen (2007), "Revenue growth rate using Fundamental analysis vol. 41, 31-40.
- [www.money.rediff.com](http://www.money.rediff.com)
- [www.investopedia.com](http://www.investopedia.com)