



*Chapter- V*

***INDUSTRY ANALYSIS:  
PERFORMANCE  
EVALUATION & CAUSE OF  
DIVERGENCE IN STOCK  
MARKET***

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## **CHAPTER-V**

### ***INDUSTRY ANALYSIS: PERFORMANCE EVALUATION & CAUSE OF DIVERGENCE IN STOCK RETURNS***

#### **5.1 INTRODUCTION**

After analysing the economic condition of any country, the next step in security analysis process is industry analysis for gaining insight into the divergence existed in the performance of different industries in an economy to make out whether such difference truly reflects in the performance of their stocks or not. In this direction, the purpose of this part of the study is to check the financial performance of selected industries and to evaluate the impact of financial performance variables on the stock market performance of considered industries to suggest significant variables which cause divergence in industry indices. As financial performance variables are available on yearly basis and according to Green (1991), there is a condition of panel data analysis that there must be 50 and above observation. Therefore, this part of analysis has used annual time series data for fourteen years from 2000-01 to 2013-14 pertaining to five sectors/industries of India with 70 observations.

This chapter has been divided into two parts. First part is an attempt to analyse the financial performance of individual industry during the study period and to compare the results of all selected industries to compose the financial health of the industries. Second part explores the most effective financial performance variables which affect industry stock price.

#### **5.2 FINANCIAL PERFORMANCE OF INDUSTRIES: A COMPARISON**

Financial performance is defined as the collaboration of various financial measures such as fixed assets, sales, debtors, capital, profit etc. Financial performance

of any organisation is an assisting way to mark the financial strengths and weaknesses of that organisation. Financial performance analysis is one of the appraisal techniques of analysis for rationale decision of investment in stock market. Performance ratios are considered in this section to get an insight of the financial performance. Labour orientation, capital intensity, profitability, leverage, liquidity and export orientation conditions of industries are examined for this purpose. Parameters such as employee cost to total cost ratio (ECTC), fixed assets to total sales ratio (FATS), return on net worth ratio (RONW), debt equity ratio (D/E), current ratio (CR) and export earning to sales ratio (EES) are used to perform analysis of financial performance and explore the real financial condition of industries. Annual growth rate and compound annual growth rate (CAGR) of the parameters are computed separately for different industries under the study and results of analysis are displayed from table- 5.1 to table- 5.6.

### **5.2.1 Labour Orientation / Employee Cost to Total Cost (ECTC)**

Results of employee cost to total cost (ECTC) ratio are reported in table- 5.1 for all selected industries under the study. The parameter of labour orientation of industry i.e. ECTC clearly conveys the difference towards the level of labour orientation of industries in India and performance of industries in terms of growth in ECTC. It is observed that growth rate of ECTC for all selected industries is changed during the study period. The results of ECTC ratio shows that only IT industry comprised of employees cost more than 50 per cent in its total cost and hence found to be more labour intensive among the selected industries. This cost increased in the later years and the highest jump is observed in 2003-04 with 23% annual growth rate. Overall, 5% CAGR of ECTC ratio is computed for IT industry which is highest in comparison with other industries for the study period. Hence, IT industry is found to be more labour intensive. Healthcare industry shows CAGR of 3% for ECTC ratio

followed by Oil & Gas industry. Positive growth is observed in Healthcare industry during the whole study period which indicates that this industry failed to reduce its employee cost. Hence, Healthcare industry is found to be labour intensive. It is observed that Oil & Gas industry has maintained its cost and turned around the same average cost during the study period and hence, ECTC ratio showed only 1% CAGR in this industry.

**Table: 5.1**  
**Employee Cost to Total Cost (ECTC)**

Year	Automobile	IT	Oil & Gas	Healthcare	Metal
2000-01	4.93 (----)	28.69 (----)	12.45 (----)	13.49 (----)	8.45 (----)
2001-02	5.1 (3%)	34.46 (20%)	12.36 (-1%)	15.07 (12%)	8.96 (6%)
2002-03	5 (-2%)	36.38 (6%)	10.22 (-17%)	15.26 (1%)	7.9 (-12%)
2003-04	4.85 (-3%)	44.81 (23%)	10.54 (3%)	15.22 (0%)	8.23 (4%)
2004-05	4.07 (-16%)	50.29 (12%)	8.32 (-21%)	15.5 (2%)	5.52 (-33%)
2005-06	4.04 (-1%)	51.78 (3%)	8.39 (1%)	15.64 (1%)	5.23 (-5%)
2006-07	3.79 (-6%)	52.91 (2%)	10.16 (21%)	15.63 (0%)	4.98 (-5%)
2007-08	3.98 (5%)	52.07 (-2%)	11.48 (13%)	15.83 (1%)	5.67 (14%)
2008-09	4.3 (8%)	47.23 (-9%)	8.52 (-26%)	16.17 (2%)	5.83 (3%)
2009-10	3.77 (-12%)	50.41 (7%)	11.45 (34%)	17.13 (6%)	5.47 (-6%)
2010-11	3.65 (-3%)	51.28 (2%)	11.47 (0%)	17.35 (1%)	5.58 (2%)
2011-12	3.66 (0%)	50.77 (-1%)	10.82 (-6%)	18.12 (4%)	5.37 (-4%)
2012-13	4.02 (10%)	53.06 (5%)	13.61 (26%)	18.26 (1%)	5.63 (5%)
2013-14	5.08 (26%)	53.86 (2%)	14.01 (3%)	18.81 (3%)	6.12 (9%)
<b>CAGR</b>	0%	5%	1%	3%	-2%
<b>Mean</b>	4.302857	47	10.98571	16.24857	6.352857

**Note:** Values in the parenthesis represent the annual growth rate.

On the other side, ECTC ratio is reduced in most of the years of the study in Automobile industry and Metal industry and only a small increase is found in the annual growth of ECTC ratio in both the industries. It's the point of stand that there is no change in ECTC ratio in Automobile industry, while CAGR of ECTC ratio is observed negative in Metal industry which indicates lack of labour orientation of these industries. It is further seen that Automobile industry and Metal industry are reluctant towards employee cost at the beginning period but ECTC ratio is found to be increased during the last three years of the study. Thus, study provides conclusive picture of increased employee cost to total cost in IT, Healthcare and Oil & Gas industries. Table- 5.1 displays that average of ECTC ratio is lowest of Automobile Industry and highest of IT industry. The best industry is one in which the labour cost

represents a small portion of the cost of operations for the rationale investment decision. Therefore, it seems that Automobile industry and Metal industry are less labour oriented and reducing their cost of labour which is a positive object about the performance of these industries. Annual growth rate of ECTC ratio shows that Automobile industry has least ECTC ratio which is the point of consideration. Hence, it is clear on the basis of ECTC ratio that Automobile industry is the best option for investment which is also confirmed while examining the mean statistics.

### **5.2.2 Export Intensity / Export Earning to Sales (EES)**

Export intensity stands for the share of revenue in total revenue from export sales and indicates firm's reliance on foreign market for getting earning. The export earning to sales ratio is employed to measure the dependency of firm on foreign market and this ratio is reported in table- 5.2 for the study period. Table- 5.2 depicts that IT industry is most exposed to the foreign markets than other industries of the sample, whereas Metal industry and Oil & Gas industry are chasing IT industry in this race. Table- 5.2 shows that EES ratio is in the range of 65% - 85% in IT industry during the study period. This means a huge share of sales of IT industry have been procured from its foreign market. Similarly, EES ratio is remained in range of 10% - 20% in Metal industry and Oil & Gas industry which reflects these industries are comparatively less exposed towards foreign market and less rely on foreign market for earning. However, the CAGR of EES ratio in IT industry is found to be very low i.e. 2%. Indeed, growth in EES ratio for IT industry is observed during the last years of study in comparison with other industries. A huge share of revenue of this industry is generated from foreign market, so this industry has a responsibility to maintain the revenue from foreign market. It is also considerable that there is stability in EES ratio in IT industry during the whole study period. CAGR of 4% in EES ratio shows

stability of revenue from export in Metal industry also; however, the percentage of EES ratio is found to be less than IT industry.

**Table: 5.2**  
**Export Earning to Sales (EES)**

Year	Automobile	IT	Oil & Gas	Healthcare	Metal
2000-01	4.740 (----)	67.150 (----)	0.580 (----)	0.750 (----)	10.330 (----)
2001-02	3.830 (-19%)	73.630 (10%)	0.380 (-34%)	1.000 (33%)	11.020 (7%)
2002-03	4.400 (15%)	78.360 (6%)	0.340 (-11%)	1.120 (12%)	15.090 (37%)
2003-04	6.810 (55%)	79.790 (2%)	1.730 (409%)	1.310 (17%)	14.660 (-3%)
2004-05	7.920 (16%)	83.900 (5%)	4.270 (147%)	2.730 (108%)	16.610 (13%)
2005-06	8.320 (5%)	81.620 (-3%)	6.660 (56%)	1.140 (-58%)	16.650 (0%)
2006-07	7.920 (-5%)	81.800 (0%)	7.760 (17%)	1.390 (22%)	19.980 (20%)
2007-08	9.410 (19%)	79.750 (-3%)	12.990 (67%)	2.020 (45%)	17.510 (-12%)
2008-09	14.590 (55%)	82.150 (3%)	11.680 (-10%)	2.390 (18%)	17.200 (-2%)
2009-10	14.190 (-3%)	80.690 (-2%)	12.280 (5%)	2.110 (-12%)	14.320 (-17%)
2010-11	11.390 (-20%)	75.530 (-6%)	11.710 (-5%)	1.680 (-20%)	13.710 (-4%)
2011-12	12.010 (5%)	78.620 (4%)	14.210 (21%)	2.040 (21%)	14.600 (6%)
2012-13	12.370 (3%)	81.980 (4%)	21.300 (50%)	2.020 (-1%)	15.550 (7%)
2013-14	11.680 (-6%)	85.270 (4%)	21.650 (2%)	3.130 (55%)	16.260 (5%)
<b>CAGR</b>	7%	2%	32%	12%	4%
<b>Mean</b>	9.255714	79.30286	9.11	1.773571	15.24929

**Note:** Values in the parenthesis represent the annual growth rate.

Therefore, there is less responsibility to maintain the revenue from export and hence, more opportunities to expand business in foreign markets for this industry which makes Metal industry as a healthy investment option. It is depicted from EES ratio that next position is obtained by Oil & Gas industry as continuous improvement is analysed in case of EES ratio of this industry. Overall, highest CAGR is found in Oil & Gas industry i.e. 32%. Eventually, on the basis of this, it is clear that Oil & Gas industry has been taking participation to global market so there are more opportunities for good investment. On the contrary, results show that around 10% share of the revenue of the Indian Automobile industry is incurred from exports, while around 3% incurred in Healthcare industry which indicates the less orientation of these industries towards foreign market. Overall, very slow annual growth is observed in these industries with CAGR of 7% & 12% which is an indication of slow progress towards foreign market. Overall, EES ratio explores that IT industry, Oil & Gas industry and

Metal industry are strong in export earning and these industries are more depend on foreign market for revenue, whereas Healthcare industry and Automobile industry are less foreign oriented. Overall, average of EES ratio is found to be highest in IT industry and lowest in Healthcare industry.

### **5.2.3 Capital Intensity / Fixed Assets to Total Sales (FATS)**

Capital intensity measures the capital requirement in fixed assets to run business; lower ratio presents the efficiency of business to earn better on the ground of capital investment in fixed assets. Capital intensity of industries is measured through fixed assets to total sales (FATS) ratio. The results of CAGR of FATS ratio for each industry are presented in table- 5.3. In terms of capital intensity, first rank is obtained by IT industry as FATS ratio has been found least in this industry and it remained around 15% to 35% throughout the study period. It is also point of consideration that FATS ratio has reduced from first year to last year of the study and hence, CAGR of -3% of FATS ratio is observed in IT industry. This shows that IT industry is capable to earn high revenue with less capital investment in fixed assets. So, heavy investment can easily bring high sales in this industry. Overall, FATS ratio in IT industry shows less risk of investment and more earning capacity. It is depicted from the table- 5.3 that Automobile industry has low degree capital intensity in the beginning of the years of the study and its capital intensity is measured around 20% in most of the years. This industry has succeeded to reduce its capital requirement in fixed assets for sales, however, a small jump is observed in this ratio for the last two years. Overall, only 4% CAGR in FATS ratio is computed which shows efficiency of this industry. It can be drawn from the results that the capital investment decision, procedure and techniques adopted by this industry for ultimate earning is better due to which it is able to secure the wealth of its investors. Metal industry is found to be on third rank in terms of FATS ratio because of 50% FATS ratio.

**Table: 5.3**  
**Fixed Assets to Total Sales (FATS)**

Year	Automobile	IT	Oil & Gas	Healthcare	Metal
2000-01	42.28 (----)	31.92 (----)	93.53 (----)	109 (----)	74.08 (----)
2001-02	39.73 (-6%)	34.1 (7%)	95.11 (2%)	121.2 (11%)	76.16 (3%)
2002-03	33.88 (-15%)	30.47 (-11%)	67.71 (-29%)	130.5 (8%)	64.54 (-15%)
2003-04	19.35 (-43%)	26.46 (-13%)	87.54 (29%)	112.3 (-14%)	57.24 (-11%)
2004-05	16.64 (-14%)	21.91 (-17%)	62.46 (-29%)	100.5 (-10%)	43.4 (-24%)
2005-06	16.08 (-3%)	19.78 (-10%)	72.48 (16%)	92.27 (-8%)	46.1 (6%)
2006-07	14.93 (-7%)	18.33 (-7%)	72.04 (-1%)	94.84 (3%)	39.28 (-15%)
2007-08	17.41 (17%)	20.6 (12%)	68.74 (-5%)	97.56 (3%)	37.44 (-5%)
2008-09	24.21 (39%)	21.68 (5%)	70.08 (2%)	96.45 (-1%)	39.94 (7%)
2009-10	23.38 (-3%)	21.61 (0%)	89.4 (28%)	93.11 (-3%)	44.77 (12%)
2010-11	21.33 (-9%)	20.5 (-5%)	87.86 (-2%)	89.22 (-4%)	45.09 (1%)
2011-12	20.34 (-5%)	19.69 (-4%)	85.23 (-3%)	80.53 (-10%)	48.53 (8%)
2012-13	20.89 (3%)	17.88 (-9%)	93.11 (9%)	76.94 (-4%)	55.56 (14%)
2013-14	24.35 (17%)	16.2 (-9%)	106.1 (14%)	60.84 (-21%)	64.1 (15%)
<b>CAGR</b>	4%	-3%	6%	-5%	4%
<b>Mean</b>	23.91287	22.93796	82.2445	96.79957	52.58911

**Note:** Values in the parenthesis represent the annual growth rate.

This clearly explores that this industry depends more than 50% of its fund in long lived assets for revenue. On the other hand, FATS ratio of Healthcare industry and Oil & Gas industry is found in between 90% - 100% during the study period. However, this ratio is declined in Healthcare industry for most of the years and a huge fall (21%) is observed in 2013-14. Overall, -5% CAGR is computed. The results depict an increasing trend in FATS ratio in case of Oil & Gas industry and due to which 6% CAGR is found. On the basis of this, it can be drawn that Oil & Gas industry and Health industry depends on high capital investments in fixed assets for better earning. Therefore, these industries are on the last rank in the. Overall, IT industry is found to be best in terms of FATS ratio followed by Automobile industry and Metal industry. Average of FATS ratio also proved to be highest of Healthcare industry and lowest of IT industry.

#### **5.2.4 Leverage / Debt Equity Ratio (D/E)**

Debt equity ratio indicates the financial risk of borrowed fund employed by the firm and measures the leverage of the firm. This ratio is the relative magnitude of



debt and equity in financing the assets of a firm and the proportion of 1:1 is considered optimum. The results of D/E ratio of various industries are shown in table-5.4 and it entails the inference that D/E ratio in IT industry has been around 0.20 during the study period which is examined to be least in sample industries and also no growth is observed. Indeed, decline is recorded from 2012-13 onwards. This indicates low risk for investor which is the positive signal for investment. Oil & Gas industry is found to be at second position in terms of leverage condition as D/E ratio is observed comparatively high in this industry than IT industry. D/E ratio of both the industries has been remained within the limit of 0.10 to 0.25 and showed no change. Automobile industry is found to be on the next position in the sample industries and its D/E ratio remained within the limit of 0.30 to 0.70. Remarkable decline in D/E ratio is recorded in this industry. Overall, -8% CAGR of D/E ratio is observed during the study period. However, the degree of leverage is more in Automobile industry in comparison with IT and Oil & Gas industries which show more risk of investment in this industry.

**Table: 5.4**  
**Debt Equity Ratio (D/E)**

Year	Automobile	IT	Oil & Gas	Healthcare	Metal
2000-01	1.12 (----)	0.12 (----)	0.14 (----)	0.7 (----)	1.68 (----)
2001-02	0.69 (-38%)	0.14 (17%)	0.18 (29%)	0.75 (7%)	1.88 (12%)
2002-03	0.5 (-28%)	0.15 (7%)	0.21 (17%)	1.08 (44%)	2.01 (7%)
2003-04	0.35 (-30%)	0.15 (0%)	0.46 (119%)	1.02 (-6%)	1.46 (-27%)
2004-05	0.38 (9%)	0.14 (-7%)	0.27 (-41%)	1.04 (2%)	1.03 (-29%)
2005-06	0.32 (-16%)	0.12 (-14%)	0.26 (-4%)	0.79 (-24%)	1.03 (0%)
2006-07	0.42 (31%)	0.14 (17%)	0.14 (-46%)	0.95 (20%)	0.86 (-17%)
2007-08	0.51 (21%)	0.2 (43%)	0.1 (-29%)	0.81 (-15%)	0.78 (-9%)
2008-09	0.66 (29%)	0.24 (20%)	0.16 (60%)	0.91 (12%)	0.82 (5%)
2009-10	0.61 (-8%)	0.22 (-8%)	0.16 (0%)	1.08 (19%)	0.75 (-9%)
2010-11	0.51 (-16%)	0.18 (-18%)	0.15 (-6%)	0.73 (-32%)	0.79 (5%)
2011-12	0.5 (-2%)	0.18 (0%)	0.15 (0%)	0.65 (-11%)	0.81 (3%)
2012-13	0.44 (-12%)	0.15 (-17%)	0.11 (-27%)	0.52 (-20%)	0.92 (14%)
2013-14	0.37 (-16%)	0.12 (-20%)	0.14 (27%)	0.44 (-15%)	0.96 (4%)
<b>CAGR</b>	-8%	0%	0%	-4%	-4%
<b>Mean</b>	0.527143	0.160714	0.187857	0.819286	1.127143

**Note:** Values in the parenthesis represent the annual growth rate.

On the other hand, rate of leverage is comparatively high in Healthcare industry and Metal industry which indicates more financial risk. It is a point of consideration that D/E ratio of these industries are within the optimum limit of safety concern as it remained less than one and even below 0.50 in few years of the study. Overall, -4% CAGR is observed in both of the industries. Hence, Healthcare industry and Metal industry are found to be more risky in comparison with other industries of the sample but still it is observed that the condition of these industries is within the range of safety. Results are confirmed from average value which is found to be the highest in Metal industry and lowest in IT industry.

#### **5.2.5 Liquidity or Current ratio (CR)**

Current ratio is considered for evaluating the liquidity condition of industries. Current ratio (CR) of sample industries is displayed in table- 5.5. While analysing the results of CR, it can be inferred that the liquidity conditions of the sample industries are not consistent over the time period. Only, -2% CAGR is measured for this ratio in IT industry and this is the only industry in which current ratio remained almost equal to 2 throughout the study period. On the basis of this, it can be understood that IT industry is maintaining a sensible & excellent level of liquidity. IT industry is followed by Healthcare industry in terms of liquidity condition as its current ratio remained more than 1 and it is better than other remaining industries of the sample. Growth in current ratio is comparatively better and continuous improvement is being recorded. Overall, highest (8%) CAGR is achieved by Healthcare industry which indicates less risk of return on investment in this industry. Current ratio of Metal industry is found to be more than 1 and consistent during the study period. Liquidity ratio remained low in Metal industry in comparison with IT Healthcare industries. Liquidity condition in Metal industry is found to be on an average. On the other side, current ratio remained close to 0.75 in Oil & Gas industry throughout the study and

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declined in the last years of the study. Overall, only 1% CAGR of current ratio is observed.

**Table: 5.5**  
**Liquidity or Current ratio (CR)**

Year	Automobile	IT	Oil & Gas	Healthcare	Metal
2000-01	0.91 (----)	2.4 (----)	0.55 (----)	0.49 (----)	0.71 (----)
2001-02	0.88 (-3%)	2.06 (-14%)	0.61 (11%)	0.43 (-12%)	0.68 (-4%)
2002-03	0.91 (3%)	2.04 (-1%)	0.54 (-11%)	0.6 (40%)	0.72 (6%)
2003-04	0.75 (-18%)	1.61 (-21%)	0.75 (39%)	0.7 (17%)	0.8 (11%)
2004-05	0.84 (12%)	1.79 (11%)	0.51 (-32%)	0.79 (13%)	1.03 (29%)
2005-06	0.79 (-6%)	1.86 (4%)	0.41 (-20%)	0.81 (3%)	1.09 (6%)
2006-07	0.7 (11%)	1.9 (2%)	0.54 (32%)	1.03 (27%)	1.2 (10%)
2007-08	0.56 (-20%)	1.6 (-16%)	0.81 (50%)	1.13 (10%)	1.12 (-7%)
2008-09	0.56 (0%)	1.41 (-12%)	0.57 (-30%)	1.08 (-4%)	0.99 (-12%)
2009-10	0.51 (-9%)	1.45 (3%)	0.53 (-7%)	1.52 (41%)	0.99 (0%)
2010-11	0.62 (22%)	1.67 (15%)	0.5 (-6%)	1.11 (-27%)	1.09 (10%)
2011-12	0.72 (16%)	1.75 (5%)	0.49 (-2%)	1.12 (1%)	1.03 (-6%)
2012-13	0.61 (-15%)	1.66 (-5%)	0.64 (31%)	1.1 (-2%)	1 (-3%)
2013-14	0.46 (-25%)	1.81 (9%)	0.59 (-8%)	1.28 (16%)	0.88 (-12%)
<b>CAGR</b>	-5%	-2%	1%	8%	2%
<b>Mean</b>	0.701429	1.786429	0.574286	0.942143	0.952143

**Note:** Values in the parenthesis represent the annual growth rate.

Current ratio of Automobile industry declined continuously and demonstrated negative CAGR (-5%). So, the liquidity situation of Automobile industry is found to be least among the sample industries. Therefore, IT and Healthcare industries are discovered comparatively safe and Metal industry exhibits an average liquidity position, while Automobile and Oil & Gas industries are noticed very weak in terms of liquidity condition. Oil and Gas industry has lowest average current ratio during the study period and this ratio is highest of IT industry.

### 5.2.6 Profitability / Return on Net worth (RONW)

Profitability condition is an important point to consider before an investment and return on net worth (RONW) ratio of industries is evaluated for this purpose. RONW shows the efficient use of the capital of shareholders in terms of income generation on the basis of the capital of shareholders. The RONW ratio of various industries is presented in table- 5.6.

**Table: 5.6**  
**Return on Net worth (RONW)**

Year	Automobile	IT	Oil & Gas	Healthcare	Metal
2000-01	4.87 (----)	14.67 (----)	20.14 (----)	1.22 (----)	4.44 (----)
2001-02	14.13 (190%)	11.02 (-25%)	31.27 (55%)	-3.68 (-402%)	11.91 (168%)
2002-03	23.88 (69%)	17.95 (63%)	23.21 (-26%)	-1.62 (-56%)	28.65 (141%)
2003-04	27.92 (17%)	26.41 (47%)	29.98 (29%)	3.62 (-323%)	39.62 (38%)
2004-05	27.81 (0%)	28.87 (9%)	29.72 (-1%)	2.37 (-35%)	25.4 (-36%)
2005-06	24.64 (-11%)	31.99 (11%)	27.57 (-7%)	4.65 (96%)	30.57 (20%)
2006-07	21.99 (-11%)	25.27 (-21%)	18.08 (-34%)	4.13 (-11%)	24.92 (-18%)
2007-08	11.78 (-46%)	15.7 (-38%)	16.62 (-8%)	3.86 (-7%)	13.98 (-44%)
2008-09	21.8 (85%)	23.85 (52%)	15.4 (-7%)	5.89 (53%)	13.99 (0%)
2009-10	21.45 (-2%)	21.59 (-9%)	16.25 (6%)	6.94 (18%)	12.47 (-11%)
2010-11	19.59 (-9%)	22.57 (5%)	18.68 (15%)	5.97 (-14%)	9.09 (-27%)
2011-12	15.87 (-19%)	22.33 (-1%)	22.56 (21%)	4.03 (-32%)	6.41 (-29%)
2012-13	14.53 (-8%)	26.45 (18%)	17.26 (-23%)	4.36 (8%)	6.03 (-6%)
2013-14	13.91 (-4%)	26.85 (2%)	16.56 (-4%)	5.85 (34%)	7.15 (19%)
<b>CAGR</b>	8%	5%	-1%	13%	4%
<b>Mean</b>	18.86929	22.53714	21.66429	3.399286	16.125

**Note:** Values in the parenthesis represent the annual growth rate.

Study recommends first rank to IT industry as its RONW ratio has been around 30% for the whole period of the study and it is recorded highest among the sample industries. This shows that IT industry has efficiently utilised its shareholders' fund. Overall, 5% CAGR of RONW ratio is determined in IT industry during the study period. The study suggests second rank to Oil & Gas industry even it has negative CAGR (-1%). The rate of RONW ratio displays that Oil & Gas industry has used its fund efficiently in comparison with rest of the industries except IT industry. Table-5.6 depicts the positive growth of RONW ratio of Automobile industry. RONW ratio of Automobile industry is observed almost equal to Oil & Gas industry but the CAGR (8%) of this ratio in Automobile industry is evaluated more than Oil & Gas industry. Healthcare industry shows a huge growth in its profitability and has 13% CAGR in RONW during the study period but still it is depicted from the results in table- 5.6 that it has low rate of return on its capital employed by shareholders. Therefore, Healthcare industry stands for weak profitability which may be the cause of denying for investment in this industry by the investors. On the basis of this ratio, it can be

summarised that Metal industry is on the last position because of the continuous decline this ratio in this industry and it shows only 4% CAGR which means this industry has low profitability. Eventually, IT industry is examined better in providing return on the capital of their shareholders. On the basis of mean statistics, it is revealed that this ratio is highest in IT industry and lowest in Healthcare industry.

### 5.3 PERFORMANCE EVALUATION OF INDUSTRIAL STOCK RETURNS: A COMPARISON

After gaining insight of the existing divergence in the financial performance of different industries, next step is to analyse whether such difference truly reflects in the performance of their stocks or not. Returns on the indices are considered to investigate this situation. Results of the sample industries are displayed in table- 5.7. The strength of the indices is measured by compound annual growth rate (CAGR) of returns. Growth of returns in all indices demonstrates huge up and down but IT industry has outperformed and achieved maximum growth in returns of IT index in comparison with other industries.

**Table: 5.7**  
**Industrial Stock Returns (RET)**

Year	Automobile	IT	Oil & Gas	Healthcare	Metal
2001-02	0.852 (----)	0.452 (----)	1.001 (----)	0.841 (----)	0.92 (----)
2002-03	1.401 (64%)	1.061 (135%)	1.425 (42%)	1.143 (36%)	1.409 (53%)
2003-04	1.825 (30%)	1.008 (-5%)	1.754 (23%)	1.475 (29%)	2.149 (52%)
2004-05	1.397 (-23%)	1.482 (47%)	1.226 (-30%)	1.321 (-10%)	1.363 (-37%)
2005-06	1.477 (6%)	1.427 (-4%)	1.324 (8%)	1.203 (-9%)	1.286 (-6%)
2006-07	1.407 (-5%)	1.423 (0%)	1.511 (14%)	1.234 (3%)	1.384 (8%)
2007-08	0.977 (-31%)	0.991 (-30%)	1.662 (10%)	1.058 (-14%)	1.572 (14%)
2008-09	0.674 (-31%)	0.718 (-28%)	0.853 (-49%)	0.9 (-15%)	0.694 (-56%)
2009-10	1.765 (162%)	1.309 (82%)	1.188 (39%)	1.216 (35%)	1.427 (106%)
2010-11	1.486 (-16%)	1.397 (7%)	1.051 (-12%)	1.434 (18%)	1.192 (-16%)
2011-12	1.01 (-32%)	0.986 (-29%)	0.855 (-19%)	1.021 (-29%)	0.781 (-35%)
2012-13	1.137 (13%)	1.018 (3%)	0.956 (12%)	1.184 (16%)	0.818 (5%)
2013-14	1.119 (-2%)	1.33 (31%)	1.032 (8%)	1.243 (5%)	0.839 (3%)
<b>CAGR</b>	2%	9%	0%	3%	-1%
<b>Mean</b>	1.271177	1.123252	1.218169	1.174986	1.218032

**Note:** Values in the parenthesis represent the annual growth rate.

Maximum growth (135%) is found in 2002-03 in case of IT industry and returns declined upto 2008-09 but again a huge jump of 82% growth is found in 2009-10. Returns of this industry declined for most of the years of the study but the growth rate shows that IT index has shown positive trend for the last years. This is an indication of favorable condition for IT index. It is observed that 9% CAGR of this industry is highest among all industries. It is clear from table- 5.7 that 3% CAGR for the healthcare index is recorded which lower than IT industry. Growth of returns of Healthcare index also explains a huge volatility but maximum growth (35%) is found in 2009-10. However, returns of Healthcare index declined in most of the years but the growth rate in returns is found to be positive from 2009-10 onwards. This is an indication of favorable condition of Healthcare index also. The return of Auto index shows a jumble situation because returns are found to be declined sharply for some of the years of study and huge growth is also observed for other years of the study. Highest growth in returns is found in 2009-10 (162%). Growth rate in returns declined in last years of the study and only, 2% CAGR is achieved.

The results also reveal that growth in returns for Oil & Gas index contains a huge volatility and the maximum growth (39%) is found in 2009-10. The returns of this index slacked for most of the years of the study. This is an indication of downward trend in Oil & Gas index. Overall, no growth is seen in returns which show the signal of low growth in returns of Oil & Gas index in comparison with other indices. In case of Metal industry, it is observed from table- 5.7 that returns of Metal index has grown with decreasing rate and highest growth of 106% is observed in 2009-10. It is also revealed that there is low improvement in returns in the last years of the study. Overall, negative CAGR (-1%) in returns is obtained which indicates low performance of Metal index. Therefore, Investment is not advisable in this industry. Mean statistics reveals that average return is highest in case of Automobile

industry followed by Oil & Gas industry and Metal industry, while average return of IT industry is found lowest in comparison with other industries.

#### 5.4 DESCRIPTIVE STATISTICS- FINANCIAL PERFORMANCE AND RETURNS

Descriptive statistics are calculated to examine whether the data series are significantly different from zero and satisfying the condition of normality while applying regression model. Descriptive statistics such as mean, standard deviation, skewness, and kurtosis are calculated for return series and financial performance variables series. Results of the descriptive statistics pertinent to each industry are displayed in table- 5.8 to table- 5.12.

##### 5.4.1 Descriptive Statistics for Automobile Industry

The results of the descriptive statistics for Automobile industry are displayed in Table- 5.8. Skewness statistics indicates that ECTC is slightly positively skewed and all other variables are approximately negatively skewed. But, FATS and D/E which are highly positive skewed exhibit that distribution is non-symmetric and large positive values are most common than negative values in these series. Small values of kurtosis for all variables suggest that underlying data series are platykurtic and less distinct peaked while comparing with the normal distribution. Only, D/E is found to be thick tailed and hence, away from normality.

**Table: 5.8**  
**Descriptive Statistics for Automobile Industry**

	Mean	Std. Dev.	Skewness	Kurtosis	Jarque-Bera (J-B)	Probability
<b>ECTC</b>	4.302857	0.562418	0.362547	1.470675	1.671014	0.433655
<b>EES</b>	9.255714	3.555885	-0.07016	1.808647	0.839423	0.657236
<b>FATS</b>	23.91287	8.654881	1.118666	2.97758	2.920258	0.232206
<b>D/E</b>	0.527143	0.204617	1.79051	6.081856	13.0209	0.001488
<b>CR</b>	0.701429	0.151549	-0.01678	1.710555	0.970547	0.615529
<b>RONW</b>	18.86929	6.603531	-0.44072	2.506349	0.595364	0.742538
<b>RET</b>	1.271177	0.343846	-0.04357	2.127724	0.416248	0.812106

On the basis of J-B test, it is noticed that null hypothesis of normality is accepted which means data is normal for all the variables except D/E which reject the null hypothesis of normality in Automobile industry. Mean for most of the variables is away from zero indicating that series are not mean reverting. It is also noteworthy to analyse the statistics of standard deviation. Large value is reported by EES, FATS and RONW which reveal that these ratios have huge up and down in Automobile industry during the sample period.

#### 5.4.2 Descriptive Statistics for Information Technology (IT) Industry

Descriptive statistics i.e. mean, standard deviation, skewness and kurtosis for IT industry are calculated for each of the variables. The descriptive statistics for IT Industry are presented in the table- 5.9. The value of skewness signifies moderate skewness distribution in all the ratios as skewness value is closer to 1 in most of the variables. However, ECTC, EES, RONW and RET are negatively skewed which indicate more negative values in these series. Statistics of kurtosis indicate that all data series in this industry are platykurtic.

**Table: 5.9**  
**Descriptive Statistics for Information Technology Industry**

	Mean	Std. Dev.	Skewness	Kurtosis	Jarque-Bera (J-B)	Probability
<b>ECTC</b>	47	8.001871	-1.26514	3.164706	3.750506	0.153316
<b>EES</b>	79.30286	4.652899	-1.30718	4.410711	5.147918	0.076233
<b>FATS</b>	22.93796	5.567282	0.904743	2.487842	2.062985	0.356475
<b>D/E</b>	0.160714	0.03792	0.803664	2.538761	1.631142	0.442387
<b>CR</b>	1.786429	0.261081	0.729409	3.337131	1.30772	0.520035
<b>RONW</b>	22.53714	5.888907	-0.43468	2.377178	0.667151	0.716358
<b>RET</b>	1.123252	0.308638	-0.70745	2.714424	1.128558	0.56877

However, ECTC, EES and CR are found to be leptokurtic. Further, J-B test reveals that null hypothesis of normality is accepted which displays the normality of the data in this industry. On the basis of this, it is observed that above mentioned variables in this industry are normally distributed. The values of standard deviation indicate that ECTC, EES, FATS, RONW are more volatile as compared with CR, D/E, RET. It is



noteworthy that all ratios are not mean reverting as their mean values are found to be greater than zero.

### 5.4.3 Descriptive Statistics for Oil & Gas Industry

Descriptive statistics for Oil and Gas Industry are presented in the table- 5.10. and it is obvious that all variables are slightly positively skewed except ECTC which is observed to be slightly negatively skewed. This demonstrates the picture of more positive values in all data series except ECTC.

**Table: 5.10**  
**Descriptive Statistics for Oil & Gas Industry**

	Mean	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability
<b>ECTC</b>	10.98571	1.801242	-0.00989	2.149303	0.422378	0.809621
<b>EES</b>	9.11	7.242649	0.325212	2.0615	0.760569	0.683667
<b>FATS</b>	82.2445	13.1098	0.075848	1.853801	0.779791	0.677128
<b>D/E</b>	0.187857	0.092668	1.952581	6.37553	15.54262	0.000422
<b>CR</b>	0.574286	0.104124	0.916778	3.449164	2.078813	0.353665
<b>RONW</b>	21.66429	5.73728	0.577848	1.764716	1.669244	0.434039
<b>RET</b>	1.218169	0.298338	0.456474	1.986801	1.007525	0.604253

However, it is observed that D/E is highly positively skewed and has thick tailed as indicated by kurtosis statistics. Values of kurtosis for rest of the variables display that these data series are platykurtic. J-B test discloses the acceptance of null hypothesis of normality which confirms the normality of the data in this industry except D/E that rejects the null hypothesis of normality. Thus, the distribution of above mentioned variables are normally distributed except D/E ratio. The value of standard deviation indicates that EES, FATS and RONW are more volatile as compared with remaining variables. It is noteworthy to analyse the mean statistics which is away from zero in most of the ratios and indicates that these series are not mean reverting.

### 5.4.4 Descriptive Statistics for Healthcare Industry

Descriptive statistics for Healthcare Industry are presented in the table- 5.11. It is observed from the value of standard deviation that FATS and RONW are more

volatile as compared to rest of the variables. It is noteworthy that all ratios are not mean reverting as their mean values are greater than zero. The values of skewness indicate that ECTC and EES are slightly positively skewed while all other variables are slightly negatively skewed. On the basis of kurtosis statistics, all variable are found to be platykurtic except RONW.

**Table: 5.11**  
**Descriptive Statistics for Healthcare Industry**

<b>Health</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>Jarque-Bera (J-B)</b>	<b>Probability</b>
<b>ECTC</b>	16.24857	1.48396	0.192485	2.328274	0.34966	0.8396
<b>EES</b>	1.773571	0.695354	0.348083	2.217761	0.639651	0.726276
<b>FATS</b>	96.79957	17.92624	-0.01435	2.901635	0.006125	0.996942
<b>D/E</b>	0.819286	0.203865	-0.29894	2.082634	0.699424	0.704891
<b>CR</b>	0.942143	0.31352	-0.08056	2.20507	0.383761	0.825406
<b>RONW</b>	3.399286	2.989122	-1.18822	3.579198	3.490062	0.17464
<b>RET</b>	1.174986	0.185903	-0.20173	2.420442	0.27011	0.873668

On the basis of this, it is observed that frequency distribution of above mentioned variables are close to normal distribution. Further, the J-B test strongly suggests that underlying data series are normally distributed as the null hypothesis of normality is strongly accepted.

#### **5.4.5 Descriptive Statistics for Metal Industry**

Descriptive statistics for Metal industry are displayed in the table-5.12. The values of skewness indicate that EES and CR are slightly negatively skewed which reveal that EES and CR remained negative in most of time of study period. On the other hand, other ratios are found to be positively skewed. Values of kurtosis statistics indicate that all data series in this industry are platykurtic. However, it is observed from J-B statistics that null hypothesis of normality is accepted in case of all variables and thus, above mentioned variables in this industry are also normally distributed. The values of standard deviation indicate that EES, FATS and RONW are more volatile as compared to ECTC, D/E, CR and RET in this industry. On the basis of the comparative analysis of all selected industries, it can be concluded that IT industry is

more labour oriented, more depend on foreign market for earning with highest liquidity, profitability rate and growth in returns among all industries, which shows comparatively more consistency in comparison with other industries in terms of financial performance. Thus, this industry is observed as the best performer.

**Table: 5.12**  
**Descriptive Statistics for Metal, Metal Products and Mining Industry**

	Mean	Std. Dev.	Skewness	Kurtosis	Jarque-Bera (J-B)	Probability
<b>ECTC</b>	6.352857	1.375916	0.911118	2.121366	2.387317	0.30311
<b>EES</b>	15.24929	2.516632	-0.34281	3.019297	0.274425	0.871785
<b>FATS</b>	52.58911	12.86018	0.619713	2.078183	1.391789	0.498628
<b>D/E</b>	1.127143	0.438098	1.036313	2.494082	2.655176	0.265116
<b>CR</b>	0.952143	0.166372	-0.423	1.920612	1.097128	0.577779
<b>RONW</b>	16.125	11.99507	0.350102	2.376452	0.512808	0.773829
<b>RET</b>	1.218032	0.40663	0.646999	3.092191	0.911586	0.633945

Overall, results reveal that Healthcare industry is more capital intensive with least profitability among the sample industries. But, this industry least depends on foreign market and have least volatile returns. Most of the financial performance variables are increased in this industry. Thus, the performance of this industry is recorded on an average and shows good opportunities for investment. Financial performance of Automobile industry and Oil & Gas industry are found satisfactory. However, Oil & Gas industry is observed more labour oriented, capital intensive, profitable, liquid and depends on foreign market in comparison with Automobile industry. Thus performance of Oil & Gas industry is better than Automobile industry. RONW and D/E ratio are recorded more volatile in Metal industry and returns of Metal index are also noticed more volatile. Therefore, results suggest the performance of this industry is worst in comparison with other industries.

## **5.5 RELATIONSHIP OF FINANCIAL PERFORMANCE OF INDUSTRY WITH INDUSTRIAL STOCK RETURNS**

Financial performance plays an important role in affecting the behaviour of stock price in the market. Therefore, the study of relationship between financial

performance and stock price helps the investors while choosing the better investment decision. Numerous studies (Srinivasan, 2012 and Raithatha & Bapat, 2013) have found the significant relationship between stock price and financial performance variables and it is found that there are various financial performance variables which affect stock price. Correlation analysis is applied to check the extent of relationship between stock prices and explanatory variables of selected industries in the current research work. Relationship between industrial stock returns & financial performance of industries have been checked by considering industrial stock returns as dependent variable and financial performance variables as independent variables.

### 5.5.1 Relationship in Automobile Industry

Table- 5.13 depicts the Pearson's coefficient of correlation for Automobile industry. The results show that financial performance variables such as FATS (-0.644), EES (0.719) and CR (-0.742) are significantly correlated with Auto index and all these coefficient of correlations are found to be significant at 5 % level of significance. The highest coefficient of correlation of Auto index is observed with CR (-0.742) which is significant at 1 % level of significance too.

**Table: 5.13**  
**Correlation Matrix for Automobile Industry**

		<b>Auto Index</b>	<b>ECTC</b>	<b>FATS</b>	<b>EES</b>	<b>D/E</b>	<b>CR</b>	<b>RONW</b>
<b>Auto Index</b>	Pearson Correlation	1						
	Sig. (2-tailed)							
<b>ECTC</b>	Pearson Correlation	-.445	1					
	Sig. (2-tailed)	.111						
<b>FATS</b>	Pearson Correlation	-.644**	.736*	1				
	Sig. (2-tailed)	.013	.003					
<b>EES</b>	Pearson Correlation	.719*	-.596**	-.783*	1			
	Sig. (2-tailed)	.004	.025	.001				
<b>D/E</b>	Pearson Correlation	-.374	.282	.625**	-.223	1		
	Sig. (2-tailed)	.187	.329	.017	.443			
<b>CR</b>	Pearson Correlation	.742*	.377	.758*	-.860*	.284	1	
	Sig. (2-tailed)	.002	.184	.002	.000	.325		
<b>RONW</b>	Pearson Correlation	-.211	-.198	-.331	.052	-.666**	.080	1
	Sig. (2-tailed)	.470	.497	.247	.859	.019	.786	

**Note:** \* significant at 1% level of Significance.

\*\* significant at 5% level of Significance.

On the other side, correlation coefficients of Auto index with other variables indicate insignificant correlation. All variables show negative relation with Auto index except CR and EES which are proved positively related. Table- 5.13 shows that all independent variables are related to each other and their degree of correlation is either low or moderate except correlation of CR with EES ratio which shows coefficient of correlation -0.860 in Automobile industry.

### 5.5.2 Relationship in Information Technology Industry

Table- 5.14 is constructed to show the relationship of IT index with financial performance. Results reveal that financial performance variables such as ECTC (0.636), FATS (-0.895), EES (0.603) and RONW (0.569) are significantly correlated with IT index and all these coefficient of correlation are significant at 5 % level of significance. On the contrary, D/E ratio and CR show insignificant correlation with IT index. FATS ratio is found to be highly correlated with IT index which is significant at 1 % level of significance.

**Table: 5.14**  
**Correlation Matrix for Information Technology Industry**

		IT Index	ECTC	FATS	EES	D/E	CR	RONW
<b>IT Index</b>	Pearson Correlation	1						
	Sig. (2-tailed)							
<b>ECTC</b>	Pearson Correlation	.636**	1					
	Sig. (2-tailed)	.014						
<b>FATS</b>	Pearson Correlation	-.895*	-.849*	1				
	Sig. (2-tailed)	.000	.000					
<b>EES</b>	Pearson Correlation	.603**	.805*	-.576**	1			
	Sig. (2-tailed)	.033	.001	.051				
<b>D/E</b>	Pearson Correlation	.068	.250	-.249	.150	1		
	Sig. (2-tailed)	.816	.388	.390	.609			
<b>CR</b>	Pearson Correlation	-.264	-.713*	.571**	-.647**	-.750*	1	
	Sig. (2-tailed)	.362	.004	.053	.012	.002		
<b>RONW</b>	Pearson Correlation	.569**	.695*	-.454	.732*	-.154	-.405	1
	Sig. (2-tailed)	.053	.006	.103	.003	.599	.151	

**Note:** \* significant at 1% level of Significance.

\*\* significant at 5% level of Significance.

Further, relationships of IT index with all variables is observed to be positive except FATS and CR. Results of table- 5.14 show that all independent variables are related to each other but their degree of correlation is either low or moderate except correlation of ECTC ratio with FATS ratio (-0.849) & EES (0.805) in IT industry.

### 5.5.3 Relationship in Oil & Gas Industry

Correlation matrix has been calculated to show the relationship of Oil & Gas index with the financial performance of this industry. Table- 5.15 reveals that financial performance variables such as FATS (-0.592), EES (0.863), RONW (0.748) are significantly correlated with Oil & Gas index and all these coefficients of correlation are significant at 5 % level of significance. On the contrary, ECTC, CR and D/E ratio show insignificant correlation with Oil & Gas index. EES ratio is found to be highly correlated with this index which is significant at 1 % level of significance.

**Table: 5.15**  
**Correlation Matrix for Oil & Gas Industry**

		Oil & Gas Index	ECTC	FATS	EES	D/E	CR	RONW
<b>Oil &amp; Gas Index</b>	Pearson Correlation	1						
	Sig. (2-tailed)							
<b>ECTC</b>	Pearson Correlation	.222	1					
	Sig. (2-tailed)	.446						
<b>FATS</b>	Pearson Correlation	-.592**	.525	1				
	Sig. (2-tailed)	.026	.054					
<b>EES</b>	Pearson Correlation	.863*	.432	-.373	1			
	Sig. (2-tailed)	.000	.123	.189				
<b>D/E</b>	Pearson Correlation	-.521	-.431	.059	-.525	1		
	Sig. (2-tailed)	.056	.124	.841	.054			
<b>CR</b>	Pearson Correlation	.072	.366	.134	.081	.105	1	
	Sig. (2-tailed)	.807	.198	.648	.782	.720		
<b>RONW</b>	Pearson Correlation	.748*	-.342	.258	-.681*	.722*	-.093	1
	Sig. (2-tailed)	.002	.232	.373	.007	.004	.752	

**Note:** \* significant at 1% level of Significance.

\*\* significant at 5% level of Significance.

The relationship of Oil & Gas index is positive with all variables except FATS and D/E ratio. Results of table- 5.15 show that all independent variables are related to each other but, their degree of correlation is either low or moderate.

#### 5.5.4 Relationship in Healthcare Industry

Correlation matrix has been constructed to find the relationship of healthcare index with financial performance indicators of this industry. Table- 5.16 depicts that financial performance variables such as ECTC (0.937), FATS (-0.907), EES (0.676), D/E ratio (-0.687), RONW (0.647) and CR (0.754) are significantly correlated with index of Healthcare industry and all these coefficient of correlation are found significant at 5 % level of significance.

**Table: 5.16**  
**Correlation Matrix for Healthcare industry**

		Healthcare Index	ECTC	FATS	EES	D/E	CR	RONW
<b>Healthcare Index</b>	Pearson Correlation	1						
	Sig. (2-tailed)							
<b>ECTC</b>	Pearson Correlation	.937*	1					
	Sig. (2-tailed)	.000						
<b>FATS</b>	Pearson Correlation	-.907*	-.851*	1				
	Sig. (2-tailed)	.000	.000					
<b>EES</b>	Pearson Correlation	.676*	.691*	-.590**	1			
	Sig. (2-tailed)	.008	.006	.026				
<b>D/E</b>	Pearson Correlation	-.687*	-.520	.569**	-.213	1		
	Sig. (2-tailed)	.007	.057	.034	.465			
<b>CR</b>	Pearson Correlation	.754*	.777*	-.843*	.689*	-.151	1	
	Sig. (2-tailed)	.002	.001	.000	.006	.606		
<b>RONW</b>	Pearson Correlation	.647**	.583**	-.752*	.561**	-.138	.848*	1
	Sig. (2-tailed)	.012	.029	.002	.037	.639	.000	

**Note:** \* significant at 1% level of Significance.

\*\* significant at 5% level of Significance.

The highest coefficient of correlation of Healthcare index is observed with ECTC which is significant at 1 % level of significance. The relationship of Healthcare index with all variables is positive except FATS and D/E ratio. The results show that almost all independent variables are related to each other but their degree of correlation is either low or moderate.

### 5.5.5 Relationship in Metal, Metal Products and Mining Industry

Correlation matrix is formulated to examine the relationships of Metal index with financial performance variables of Metal, Metal & Mining industry in table- 5.17. It is depicted from table- 5.17 that financial performance variables such as ECTC (-0.769), FATS (-0.948), EES (0.559), D/E ratio (-0.879) and CR (0.750) are significantly correlated with Metal index and all these coefficient of correlation are significant at 5 % level of significance. On the contrary, RONW ratio shows insignificant correlation with Metal index. FATS ratio is found highly correlated with Metal index which is significant at 1 % level of significance. Relationships of Metal index with all variables are positive except FATS, ECTC, D/E and RONW. The results of table- 5.17 show that all independent variables in this industry are related to each other but their degree of correlation is either low or moderate except correlation of D/E ratio with ECTC ratio (0.814) and CR with ECTC ratio (-.838).

**Table: 5.17**  
**Correlation Matrix for Metal, Metal Products and Mining Industry**

		<b>Metal Index</b>	<b>ECTC</b>	<b>FATS</b>	<b>EES</b>	<b>D/E</b>	<b>CR</b>	<b>RONW</b>
<b>Metal Index</b>	Pearson Correlation	1						
	Sig. (2-tailed)							
<b>ECTC</b>	Pearson Correlation	-.769*	1					
	Sig. (2-tailed)	.001						
<b>FATS</b>	Pearson Correlation	-.948*	.778*	1				
	Sig. (2-tailed)	.000	.001					
<b>EES</b>	Pearson Correlation	.559**	-.717*	-.350	1			
	Sig. (2-tailed)	.027	.004	.221				
<b>D/E</b>	Pearson Correlation	-.879*	.814*	.701*	-.580**	1		
	Sig. (2-tailed)	.000	.000	.000	.030			
<b>CR</b>	Pearson Correlation	.750*	-.838*	-.689*	.742*	-.781*	1	
	Sig. (2-tailed)	.002	.000	.006	.002	.000		
<b>RONW</b>	Pearson Correlation	-.297	.016	.456	.451	.168	.092	1
	Sig. (2-tailed)	.303	.956	.101	.105	.565	.753	

**Note:** \* significant at 1% level of Significance.

\*\* significant at 5% level of Significance.

On the basis of the comparison of all five industries, it is remarkable that FATS ratio is negatively while EES ratio is positively correlated with all indices of this study. It can be concluded that selected financial performance variables for industry analysis



under the study are robust enough to detect the impact of financial performance of industry on industry indices.

## 5.6 SIGNIFICANT DIFFERENCE IN THE PERFORMANCE OF INDUSTRIES

It is more pertinent to understand the relationship of financial performance variables with industrial stock returns before examining the most important indicators which affect stock price. Regression model based on panel data has been applied to estimate the directions of effect of financial performance variables. Initially, analysis of variance (ANOVA) has been computed to satisfy the condition i.e. there should be heterogeneity among subjects to apply panel data based regression model (Gujarati et. al., 2012) and to understand the broader outlook of selected variables of all the industries. It is used to examine the significant difference among all the variables of the study for all five industries.

**Table: 5.18**  
**Analysis of Variance for Association in Industries**

		Sum of Squares	Df	Mean Square	F	P-Value (Sig.)
<b>Index Price</b>	Between Groups	160574013.855	4	40143503.464	3.275	.017
	Within Groups	796659945.181	65	12256306.849		
	Total	957233959.036	69			
	Within Groups	10357.342	65	159.344		
	Total	11606.944	69			
<b>ECTC</b>	Between Groups	16958.381	4	4239.595	295.706	.000
	Within Groups	931.918	65	14.337		
	Total	17890.299	69			
	Within Groups	3302.149	65	50.802		
	Total	9078.667	69			
<b>FATS</b>	Between Groups	62821.308	4	15705.327	102.716	.000
	Within Groups	9938.533	65	152.901		
	Total	72759.840	69			
	Within Groups	147.780	65	2.274		
	Total	404.668	69			
<b>EES</b>	Between Groups	56874.510	4	14218.628	759.812	.000
	Within Groups	1216.367	65	18.713		
	Total	58090.877	69			
<b>D/E</b>	Between Groups	9.629	4	2.407	42.175	.000
	Within Groups	3.710	65	.057		

	Total	13.339	69			
<b>CR</b>	Between Groups	12.517	4	3.129	68.643	.000
	Within Groups	2.963	65	.046		
	Total	15.481	69			
<b>RONW</b>	Between Groups	3366.972	4	841.743	15.941	.000
	Within Groups	3432.244	65	52.804		
	Total	6799.216	69			
	Within Groups	48172591317189	65	741116789495.223		
	Total	119903646284236	69			

Table- 5.18 shows that there is significant difference in five industries for all variables which is indicated by the p-values ( $< 0.05$ ). It means, financial performance of all industries is significantly different during the study period. Hence, it is required to study the financial performance parameters in depth to better understand the situation of industries for rational investment decision which has been earlier evaluated by CAGR and descriptive statistics. Descriptive statistics and ANOVA confirm that there has been significant difference in the returns and financial performance of different industries. Now, the next step is to understand the indicators which affect most to the stock price.

## **5.7 IMPACT OF FINANCIAL PERFORMANCE OF INDUSTRY ON INDUSTRIAL STOCK RETURNS**

Now, it is required to check the indicators that have more effect on industrial stock returns. Heterogeneity is observed in the industries and techniques of panel data estimation are more informative, efficient and better to detect the effects (Gujarati et al., 2012) in this case. Panel data can better develop the empirical analysis for measuring the effect of financial performance on industrial stock returns. Stationarity of panel data has been checked by applying panel data unit root tests in the first phase and then, inferential measures are computed with fixed effect model in the later phase. Results are shown in table- 5.19 & table- 5.20.

### 5.7.1 Panel data Unit Root Tests

Panel data has been used in this part; hence, stationarity is checked by applying panel data unit root tests because panel data unit root are statistically stronger than time series unit root tests due to the increase in variability in the data (Im, Pesaran & Shin, 1997). LLC and IPS tests have been applied which were developed by Levin, Lin & Chu (2002) and Im, Pesaran & Shin (2003) respectively and Schwarz criterion is used. It is noteworthy that IPS test is more flexible and use the likelihood framework. It allows both the stationary as well as non stationary series (Barbieri, 2006). Both the tests are based on the null hypothesis of presence of unit root.

**Table: 5.19**  
**Panel data Unit Root Tests**

Variables	LLC		IPS	
	Statistics	Probability	Statistics	Probability
Index	1.1186	0.8683	2.46129	0.9931
Index	-4.54693*	0.000	-2.527*	0.0058
ECTC	0.46762	0.68	0.34603	0.6353
ECTC	-4.27171*	0.000	-4.27762*	0.000
FATS	-4.24312*	0.000	-1.70045*	0.0445
FATS	0.55526	0.7106	-1.22684	0.1099
EES	-1.22206	0.1108	-0.39638	0.3459
EES	-3.11353*	0.0009	-2.56146*	0.0052
D/E	-0.88575	0.1879	-0.63423	0.263
D/E	-2.8851*	0.002	-2.14165**	0.0161
CR	-2.07616***	0.087	-1.46635***	0.0713
CR	-1.6704**	0.0474	-1.88002**	0.0301
RONW	-2.48356*	0.0065	-1.71271**	0.0434
RONW	-3.50646*	0.0002	-2.51781*	0.0059

**Note:** \*Significant at 1% level of Significance, \*\*Significant at 5% level of Significance, \*\*\*Significant at 10% level of Significance.  
indicates that the first differences of the variables.

The results of unit root tests are presented in table- 5.19. It is observed from the results of LLC and IPS tests that index price and performance variables are not stationary at levels and became stationary at the first difference at 5% level of significance. However, statistics of LLC and IPS tests show that the null hypothesis of non stationary can not be rejected for CR and FATS at level. Hence, CR and FATS are observed to be stationary at levels. The null hypothesis can not be rejected at level

for all other variables. Hence, these are non stationary at level but null hypothesis can be rejected at first difference, so other variables are found to be stationary at first difference. Multicollinearity status among the panel data of independent variable is also checked which provides the evidence of the absence of multicollinearity problem.

### 5.7.2 Industrial Stock Returns and Financial Performance: An Empirical Model

Explanatory power of the performance variables to explain industry stock returns is checked by using regression model based on panel data. Explanatory variables are not drawn randomly and selected on the basis of literature which proved that these variables are significant to affect the index price of industry.

Fixed effect model allows heterogeneity among the subjects by allowing each entity to have its own intercept value. The explanatory power of industrial financial performance variables has been checked by applying fixed effect model to explain the industrial stock returns. The model is considered in equation- (5.1).

$$\text{Stock Price} = \alpha + \beta_1 \text{ECTC} + \beta_2 \text{EES} + \beta_3 \text{FATS} + \beta_4 \text{CR} + \beta_5 \text{D/E} + \beta_6 \text{RONW} + \dots \dots \dots (5.1)$$

Where,  $\alpha$  is constant term,  $\epsilon$  is error term,  $\beta$  represents the coefficients of performance variables. Independent financial performance indicators of industry such as: employee cost to total cost, export potential (export earning to total sales), capital intensity (% of fixed assets to total sales), liquidity (current ratio), leverage (debt to equity ratio), and profitability (return on net worth) are represented by ECTC, EES, FATS, CR, D/E and RONW respectively. Model is applied to investigate the following null hypothesis:

**Null hypothesis (H<sub>0</sub>): There is no significant impact of financial performance parameters on industrial stock returns.**

Table- 5.20 presents the results of fixed effect model where the effect of the industry financial performance on stock returns is estimated for the period of 2001 to 2014. P-

value of F statistics depicts that null hypothesis is rejected and hence, parameters in regression equation are not jointly equal to zero which represents, the model is fit at 1% level of significance. Fixed effect model depicts the value of  $R^2$  which is 0.55. This value reveals that 55 % variation in industrial stock returns is explained by the financial performance variables taken under the study. Table- 5.20 also presents the estimates of coefficients of all the regressors of the model and null hypothesis of the impact of variables is rejected for most of the variables. CR and RONW ratios show the positive impact for variability in industrial stock price and found to be significant at 1 percent level of significance which implies more profitability and liquidity affects results more in the industry and represents positive signal for the share returns in the industries under the study.

**Table: 5.20**  
**Fixed Effect Model (FEM)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.0108	0.152687	-0.07096	0.9437
DEES	0.1384	0.011892	-3.23403	0.0021*
DD/E	-0.2300	0.187237	-1.22884	0.0245**
DCR	0.5530	0.169192	3.268675	0.0019*
RONW	0.1980	0.004318	4.585739	0.000*
DECTC	0.0223	0.015276	1.461372	0.1497
FATS	-0.0030	0.002272	-1.33887	0.1862
<b>Effects Specification</b>				
Cross-section fixed (dummy variables)				
R-squared	0.558986	Mean dependent var		0.148074
Adjusted R-squared	0.477316	S.D. dependent var		0.274674
S.E. of regression	0.198581	Akaike info criterion		-0.24219
Sum squared resid	2.12945	Schwarz criterion		0.125788
Log likelihood	18.87102	Hannan-Quinn criter.		-0.097
F-statistic	6.844498	Durbin-Watson stat		2.321244
Prob(F-statistic)	0.000001			

**Note:** \*Significant at 1% level of Significance,  
\*\*Significant at 5% level of Significance.

ECTC also shows positive impact on industrial returns but it is found insignificant. However, D/E and FATS confirm negative impact but coefficient of D/E is found significant at 5% level of significance. It means dependency of industry on foreign

industries has not adverse impact on the industrial returns. Similarly, dependency on debt for arrangement of funds is also not in the favour of returns. However, results of the model describe that null hypothesis can not be rejected in case of ECTC and FATS which presents an evidence of insignificant impact of the aforesaid variables on industrial stock returns. Thus, fixed effect model provides evidence that ECTC and FATS are not important determinants to affect industry share returns. Therefore, fixed effect model rejects the null hypothesis in case of EES, CR, RONW and D/E; hence, presents the evidence of significant impact of these variables on industrial stock returns. Liquidity (CR) is found to be highly affecting factor, while profitability (RONW) showed very weak effect. This suggests that an increase in capital intensity (FATS) & leverage (D/E) will decrease the industrial stock returns, while an increase in export orientation (EES), liquidity (CR) & profitability (RONW) will increase the industrial stock returns. But, the model fails to rejects null hypothesis in case of ECTC and FATS. This establishes a conclusion that ECTC and FATS are not important determinants of industrial stock returns. Therefore, all performance variables have significant impact on returns except ECTC and FATS at 5% level of significance.

## **5.8 SUMMARY ON THE BASIS OF INDUSTRY ANALYSIS**

Financial performance of an industry is an assisting way to mark the strengths and weaknesses of that industry. Comparative analysis based on financial performance parameters has been investigated for the purpose of performance evaluation and to assist the investors while selecting potential industry for better investment opportunity. Various ratios of financial performance are analysed to evaluate the financial performance of the industries under the study. The results of the study concluded that IT industry has comparatively more consistency in comparison with other industries. Thus, this industry is observed as the best performer. Healthcare

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industry is more capital intensive with least profitability among the sample industries. Most of the financial performance variables are increased in this industry. Thus, the performance of this industry is recorded on an average and shows good opportunities for investment. Financial performance of Automobile industry and Oil & Gas industry are found to be satisfactory. However, performance of Oil & Gas industry is better than Automobile industry. The results suggested that the performance of Metal industry is worst in comparison with other industries.

It is remarkable that FATS ratio is found to be negatively, while EES ratio is positively correlated with all indices of this study. Fixed effect model has been employed in an attempt to estimate the determinants which affect industrial stock price and results revealed that export earning, liquidity and profitability have positive and significant impact on industrial stock returns. FATS and D/E have negative and significant impact on stock price, whereas ECTC and FATS are not important indicators to affect industrial stock returns. Out of these variables, liquidity is found strongest variable to affect stock price. Overall, 55% variation in returns is observed due to the selected financial performance variables under the study.