CHAPTER 8:

EPILOGUE

8.1 Introduction: The introductory chapter of this thesis highlighted the basic tenets of the study mainly covering statement of the problems, objectives, relevant hypotheses and scope of the study. The subsequent chapters are basically devoted to achieving the objectives under the well-framed research methodology and appropriate analysis & discussions. This chapter summaries the key findings of the study; draws some meaningful conclusions; the major contribution of this research; suggests some policy implications, and last part of the chapter outlines some recommendations for the future research.

8.2 Summary of Findings: In this concluding part of the thesis it is proposed to sum up, the broad observations. It basically recounts the findings of the research investigations undertaken as per four objectives framed for the study. Below we recall the major findings in the following paragraphs.

8.2.1 Major Findings for Objective Number One

So far as the identification of cost components and cost behavior is concerned it is observed that in case of *IT-Software Industry* Employee cost (average 43% of total cost) is the main cost element in both this pre-recession (2003-08) and post-recession (2009-14) periods followed by Misc. expenses (avg. 17%), Operating expenses (average 14%) and Selling & Administration expenses(avg.14%). The results of the ABJ regression models with major costs, i.e. Employee cost, Operating expenses, Misc. expenses and Selling & Adm. expenses indicate that selected costs do not exhibit cost stickiness. We find evidence of non-sticky cost behavior for the major cost components of Software Industry.

Interest expenditure (average 64%) is the major cost element of the *Banking industry* in pre-recession (2003-08) and post-recession (2009-14) periods followed by Provisions & contingencies (avg. 14.63%), Employee cost (avg.14.18%) and Operating & Adm.expenses (avg.5.23%). The results of ABJ regression models with major costs indicate that selected costs do not exhibit cost stickiness.

In the *Finance Industry* Operating & Adm.expenses is the major cost element in pre-recession (2003-08) and post-recession (2009-14) periods, i.e. average 58% and 60% respectively, followed by Interest expenses (average 24%). However, in

the case of Interest expenses, the result has shown increasing trends. It is also notable that the relation between these two major cost elements is in opposite directions. The results of ABJ regression for Misc. expenses, Interest expenses, and Employee expenses indicate cost stickiness behaviour. β_2 of Misc. expenses is -0.804 (but insignificant), β_2 of Interest expenses is –1.174 (significant but Adj. R^2 is 0.239) and for β_2 of Employee expenses is -1.120(but insignificant).

In the *Refineries Industry*, average Raw materials cost is in increasing trend, i.e. varies from 87.83 % to 90.89% of the total cost and average spending for Raw materials cost is higher in post-recession periods. Other cost elements likes- Depreciation, Employee cost, Misc expenses, Selling & administration expenses and Employee cost accounted only 10 % of the total cost. As per the interpretation of the ABJ regression model, the Raw Materials cost follow costs stickiness, but 'Other Manuf. expenses' and Selling & Admn. expenses follow anti-sticky cost behaviour. Here, only Selling & Admn. expenses are significant (.005), β_2=0.853, i.e. β_1+ β_2 =1.542 (0.689 + 0.853). The result indicates that Selling & Admn. expenses increase by 0.689% for 1% increase in revenue.

In the *Power Generation & distributions* Industry, Electricity & Fuel expenses give us an overview that in pre-recession periods, it was on an increasing trend (37% to 68.7%), but decreasing in post-recession periods (67 % to 55%). As the major cost element of the industry decreasing; simultaneously, others cost elements likes - Operating expenses (averageg.9.15%), Interest expenses (avg.8.82%), and Misc. expenses (avg. 3.90%) are increasing slightly during post-recession periods. The results of estimating the ABJ regression of models with Operating expenses indicates that selected cost exhibit stickiness but insignificant.

In *Steel Industry*, Raw materials cost is the major cost element (average 58%) of the Steel industry during pre (2003-08) and post-recession (2009-14) periods, followed by Employee cost (avg.10%) in pre-recession periods and Other Manufacturing expenses (avg.10%) in post-recession periods. The results of the ABJ regression model with major cost elements indicates that selected costs do not exhibit cost stickiness behaviour.

8.2.2 Major Findings for Objective Number Two

To analyze the impact of the cost structure of the firm's performances on *IT-Software Industry,* we have considered variables such as; Cost of traded software packages, Operating expenses, Employee cost, Selling & Administration expenses, Miscellaneous expenses and Dummy variables (for measuring the impact of the recession). Dummy variable (β= -.397) also show a negative impact of the recession on this industry. The overall results of Software industry indicate that the coefficient of one cost component namely Selling & admin. expenses are negative (-1.277) but insignificant (.089). Hence, the results are sufficient to accept the null hypothesis (i.e. cost components of the companies across the selected industries have no impact on firm performance) for all the cost components. Again, Employee cost is significantly and positively associated with ROA for Zensar Tech.(β=3.773), Wipro (β=2.725), and Hexaware Tech.(β= 1.365). On the contrary, the negative β value (-10.170) for Employee cost in case of TCS, Oracle Fin. Serv. (-2.177), 3i Infotech (-0.642) and KPIT Tech. (-0.952) indicate that the company's talent pool is not contributing towards its growth of ROA. Overall results for the IT-Software industry indicate that none of the co-efficient of cost components is found to be statistically significant with ROA. Hence, the results are sufficient to accept the null hypothesis (H_0).

In the case of *Banking Industry* as a whole, the results indicate that the influence of Employee cost on RNP is positive (β=.860) and significant (.019). This implies that bank employees play the crucial role in enhancing the profitability of banks. Likewise, the influence of Interest expenses on RNP is found to be positive (β=.734) and significant (.022). This also implies the efficiency of the Industry in generating profit. The influence of Other expenses. provisions and contingencies on RNP is negative (β=-1.038) and significant (.002). The negative influence indicates that this cost component inversely associated with the profitability. However, for other cost components, the beta coefficients are statistically insignificant. Thus, based on the results, the null hypothesis (H_{01}: cost components of the companies across the selected industries have no impact on firm performance) is rejected for the Banking Industry for all cost components except Operating & Administrative expenses. This implies that there is a significant

influence of the cost components on RNP of the Banking Industry. The combined outcome of the Banking Industry indicates that the influence of Interest expenses on ROA is positive (2.803) and insignificant (.073). Employing the first model, the study has got the similar results. However, the influence of Employee cost on ROA is found to be positive (β=1.316) but not significant (.404). Thus, based on the results, the null hypothesis (H_0) is rejected for two cost components, namely Interest expenses and Other expenses. provisions & contingency. For other two cost components, the results are not sufficient to reject the null hypothesis.

To analyze the impact of cost components on firm performances of *Finance Industry*, we have considered major cost components, i.e. Operating & admn. expenses, Miscellaneous expenses, Interest expenses, Employees cost and Dummy variables(for measuring the impact of the recession) as explanatory variables. The overall results of Finance industry indicate that the coefficient of Employee cost is positive (1.402) but insignificant (.075). Hence, the null hypothesis i.e. there is no impact of cost component on RNP is accepted for Employee cost. Although, for other cost components employed in the regression model, the observed coefficients are statistically insignificant. Hence, the results are sufficient to accept the null hypothesis (H_0) for all other cost components. Similarly, the observed coefficient of the dummy variable is found to be negative (β= -343) but insignificant (.186). This implies that there is no significant difference between pre and post recession period in influencing the RNP. On the other hand, where ROA is the depended variables, overall results for the Finance industry indicate that none of the co-efficient of cost components is found to be statistically significant on ROA. Hence, the results are sufficient to accept the null hypothesis.

In *Refineries industry*, two cost components namely, Raw Materials (β= 1.219) and Other Mnf. expenses (β= 2.151) are positively influence the RNP but insignificant. Overall results for the Refineries industry indicate that none of the co-efficient of cost components is found to be statistically significant. Hence, the results are sufficient to accept the null hypothesis. Overall results for the Refineries industry indicate that none of the co-efficient of cost components is found to be statistically significant on ROA. Hence, the results are sufficient to accept the null hypothesis

(H_{01}), i.e. cost components of the companies across the selected industries have no impact on firm performance.

To analyze the impact of the cost structure of the firm's performances in *Power Generation & distribution Industry,* In the case of Lanco Infratech, the coefficient of all the explanatory variables is statistically significant. Negative β value for Electricity & Fuel expenses in the case of Lanco Infratech (-.246) indicates the fact that this cost component is not contributing towards its growth of RNP. Selling & Admin expenses have a negative and significant impact on the profitability of Lanco Infratech (-.861). Operating expenses in the case of Lanco Infratech (1.986), Energy Devl.Co. (.507) and Reliance Infra (0.548) have a positive and significant impact on the dependent variable, RNP. The beta value of Miscellaneous expenses has the negative and significant effect on Lanco Infratech (-.851) and positive and significant impact on Potis Power (1.050). Overall results for the Power Gen. & dist. industry indicate that none of the co-efficient of cost components is found to be statistically significant. Hence, the results are sufficient to accept the null hypothesis (H_{01}), i.e. cost components of the companies across the selected industries have no impact on firm performance (both RNP and ROA).

In the *Steel Industry* as a whole, the results indicate that the influence of Other Mnf.exp on RNP is positive (β=4.690) and significant (.056). However, for other cost components, the beta coefficients are statistically insignificant. Likewise, the influence of Raw Materials cost on RNP is found to be positive (β=3.715) but insignificant (.091) and the influence of Selling. Adm.expenses on RNP is negative (β=-2.570) but insignificant (.099). The negative influence indicates that these cost components inversely associated with the profitability. Thus, based on the results, the null hypothesis (H_{01}), i.e. cost components of the companies across the selected industries have no impact on firm performance, is rejected in the case of Steel Industry for Other Manufacturing.expenses only. This implies that there is a significant influence of the cost components on RNP of the Steel Industry. Similarly, overall results for the Steel industry (ROA as dependent variables) indicate that none of the co-efficient of cost components is found to be statistically significant on ROA. Hence, the results are sufficient to accept the null hypothesis (H_{01}).

8.2.3 Major Findings for Objective Number Three

In *IT-Software Industry*, we have seen that cost efficiency of the 16 companies during pre and post recession periods are changing accordingly with different efficiency measurements (few of them are 3i Infotech, Cyient, Firstsour.Solu, HCL Technologies, etc.). Hence, the null hypothesis, H_{02}: there is no change in the cost efficiency of the companies during pre and post recession period is rejected. On the contrary, 5 companies, i.e. eClerx Services, Financial Tech., Infosys, Rolta India and Vakrangee are fully efficient during pre and post-recession periods, i.e. cost efficiency of the companies are not changing during pre and post recession periods. Hence, the null hypothesis (H_{02}) is accepted here.

We have seen that cost efficiency of the 11 *Banking companies* during pre and post recession periods are changing accordingly with different efficiency measurements. Hence, the null hypothesis, H_{02}: there is no change in the cost efficiency of the companies during pre and post recession period is rejected. Similarly, 10 Banks, namely- Axis Bank, HDFC Bank, Corporation Bank, ICICI Bank, IDBI Bank, Indian Bank, IndusInd Bank, Kotak Mah.Bank, UCO Bank, and PNB are fully efficient during pre and post-recession periods, i.e. cost efficiency of the companies are not changing during pre and post recession periods, in that case, the null hypothesis (H_{02}) is accepted.

In *Finance Industry*, we have seen that cost efficiency of the 14 companies during pre and post recession periods are changing accordingly with different efficiency measurements. Hence, the null hypothesis, H_{02}: there is no change in the cost efficiency of the companies during pre and post-recession period is rejected. On the contrary, 7 companies, i.e. Bajaj Holding, Capri Global, HDFC, IFCI, Power Finance Corporation, Tata Inv.Corpn., Rural Elec.Corp. are fully efficient during pre and post-recession periods, i.e. cost efficiency of the companies are not changing during pre and post recession periods, in that case, the null hypothesis(H_{02}) is accepted.

In *Refineries Industry*, we have seen that cost efficiency of the 5 companies during pre and post recession periods are changing accordingly with different efficiency measurements. Hence, the null hypothesis, H_{02}: there is no change in the cost

efficiency of the companies during pre and post a recession period is rejected. On the contrary, 2 companies, i.e. Reliance Inds. and MRPL are fully efficient during pre and post-recession periods, i.e. cost efficiency of the companies are not changing during pre and post recession periods, in that case, the null hypothesis(H_{02}) is accepted.

In *Power Generation & Distribution Industry*, we have seen that cost efficiency of the 8 companies during pre and post recession periods are changing accordingly with different efficiency measurements. Hence, the null hypothesis, H_{02}: there is no change in the cost efficiency of the companies during pre and post a recession period is rejected. On the contrary, 9 companies, i.e. Lanco Infratech, BF Utilities, Energy Devl.Co., JSW Energy, Neyveli Lignite, Monnet Inter, NHPC Ltd, Potis Power and Power Grid Corpn. are fully efficient during pre and post-recession periods, i.e. cost efficiency of the companies are not changing during pre and post recession periods, in that case, the null hypothesis(H_{02}) is accepted.

In case of *Steel Industry*, we have seen that cost efficiency of the 13 companies during pre and post recession periods are changing accordingly with different efficiency measurements. Hence, the null hypothesis, H_{02}: there is no change in the cost efficiency of the companies during pre and post recession period is rejected. On the contrary, 8 companies, i.e. Tata Steel, APL Apollo, JSW Steel, Mah. Seamless, Prakash Inds., Sarda Energy, Monnet Ispat, PSL are fully efficient during pre and post-recession periods, i.e. cost efficiency of the companies are not changing, in that case, the null hypothesis (H_{02}) is accepted.

8.2.4 Major Findings for Objective Number Four

In IT-Software Industry we have segregated the top companies are as follows-

The companies which have followed *cost leadership strategy* during pre-recession periods are Wipro, TCS and Tech Mahindra as for these companies' Assets turnover ratios (AT) is high and Operating Profit Margin (OPM) is less. For Example, in case of Wipro AT is 7.54, OPM is 25.26 %, ROA is 26.71% and Average Market Share is 15.27%). Again, Wipro and HCL Tech. have followed *Cost leadership strategy* in post-recession period.

Similarly, with high OPM and Low AT - *TCS* (AT= 4.17, OPM= 32.56%, ROA= 38.80%, Avg.MS= 15.18%) has followed *differentiation strategy* in post-recession periods.

Again, Infosys, HCL Tech. and Oracle Fin. Services have followed *hybrids strategy* during pre-recession periods as heir AT ratio is high and OPM also higher. For Example, in case of Infosys (AT=5.80, OPM=35.93 %, ROA=35.03%, Avg.MS= 14.34%). However, Infosys and Oracle Fin. Services are able to continue with *hybrids strategy* during post-recession periods.

In Banking Industry we have segregated the top companies are as follows-

The companies have followed *cost leadership strategy* during pre-recession periods are Bank of India, Corporation Bank and Indian Overseas Bank as for these companies' assets turnover ratios (AT) is high and Operating Profit Margin (OPM) is less. For Example, in case of Bank of India AT is 0.23,OPM is 62.66%, RONOA is 14.6, ROE is 21.49 and Avg.MS is 3.74%). Moreover, few companies have followed *cost leadership strategy* in post recession period are; IndusInd Bank, HDFC Bank, and St Bank of India.

With low AT ratio and high OPM, Axis Bank (AT=0.17, OPM=64.84%, RONOA=10.71, ROE=21.34, Avg.MS=1.45%) has followed *differentiation strategy* in pre recession periods. However, in post recession periods Allahabad Bank, Corporation Bank and IDBI Bank have followed *differentiation strategy*.

The companies have followed hybrids strategy during pre recession periods are Canara Bank (AT=0.22, OPM=65.58%, RONOA=14.77, Avg.MS = 4.52 %,) and Union Bank (I) (AT=0.22, OPM=65.39%, RONOA=14.71, Avg.MS = 2.95 %). Similarly, in post recession period Andhra Bank, Syndicate Bank, Bank of Baroda, Bank of India and Indian Overseas Bank companies have followed *hybrids strategy.*

In Finance Industry we have segregated the top companies are as follows-

Bajaj Holdings has followed *cost leadership strategy* during pre-recession periods as for the companies' Assets turnover ratios (AT) are high and Operating Profit Margin (OPM) is less, i.e. for Bajaj Holdings AT ratio is 7.30 and OPM is 32.82

%, RONOA is 123.06 and Avg.MS is 4.24%.

The companies have followed *differentiation strategy* in pre-recession periods are HDFC, Power Fin.Corpn., Rural Elec.Corp. and LIC Housing Fin., again *HDFC* , Power Fin. Corpn. , LIC Housing Fin., IDFC and Shriram Trans. (AT=0.36, OPM=76.51%, RONOA =27.03,) have followed *differentiation strategy* in post-recession periods .

With high AT ratio and high OPM, Tata Inv.Corpn. (AT=1.65, OPM=69.95%, RONOA =158.49, ROA=21 %, Avg.MS= 1%, APATM (%) =89.6) has followed *Hybrids strategy* in pre recession periods. However, in post-recession periods Rural Elec.Corp. has followed *hybrids strategy*.

In Refineries Industry, we have segregated the top companies are as follows-

The company which has followed *cost leadership strategy* during pre and post recession periods is BPCL, as for the company' AT is high and Operating Profit Margin (OPM) is less, i.e. AT=1.73, OPM=13.64%, RONOA =21.97. CPCL, HPCL and BPCL also have followed *cost leadership strategy* in post-recession period.

With low AT ratio and high OPM, Reliance Industries has followed *differentiation strategy* during pre and post-recession periods. In post recession period their AT is1.73, OPM is 13.64% and average Market Share is 22.72%.

The companies those have followed *hybrids strategy* during pre-recession periods are IOCL, CPCL and MRPL. In case of IOCL AT is 3.42 and OPM=6.54% with average MS 35.21%. However, only IOCL has followed *hybrids strategy* in post-recession period.

In Power Generation & Distributions Industry, we have segregated the top companies are as follows-

With high AT ratio and low OPM, Tata Power Co. and Reliance Infra. have followed *cost leadership strategy* during pre-recession period. For an example, Tata Power Co. AT is 1.5, OPM is 25.59%, and Avg.MS is 4.44%. In post-recession period we have seen two companies have followed *cost leadership strategy* is Reliance Infra. and Lanco Infratech.

With low AT ratio and high OPM, Power Grid Corpn and Neyveli Lignite have followed *differentiation strategy* in pre recession periods. Moreover, in post-recession period only Power Grid Corporation has followed *differentiation strategy* as their AT ratio is .21, OPM is 88.82% and RONOA is 18.64.

Company with high AT ratio and high OPM in pre-recession period is NTPC (AT=1.12, OPM=41.88%, RONOA =46.47, ROA=9%, Avg.MS=24.06%, APATM (%) =22.13), which has followed *hybrids strategy*. However, in post-recession periods, two companies have followed *hybrids strategy*, i.e. NTPC and Tata Power Co.

In Steel Industry, we have segregated the top companies are as follows-

The companies have followed *cost leadership strategy* during pre and post-recession periods are- Jindal Saw and Uttam Galva. For an example, in case of Uttam Value Steels AT is 3.82 and OPM is 2.87%.

Tata Steel, Jindal Steel and JSW Steel have followed *differentiation strategy* in pre recession periods. For an example, in case of Tata Steel AT is 2.02 and OPM is 34.23% and RONOA is 71.42, ROA=21.32%, Avg. MS=15.96%. Again in post recession periods, Tata Steel, Bhushan Steel , JSW Steel and Jindal Steel has followed this strategy

With high AT ratio and high OPM in pre and post recession period is SAIL has followed *hybrids strategy*. In post-recession period their AT is 3.04, OPM is 17.32%, RONOA is 55.28 and average MS share is 20.77%.

8.3 Conclusion: From the study, it is observed that for each and every industry some major cost components are influencing the cost structure of the companies in the industry. It also found out that some of the costs are sticky and some of them are non-sticky in nature. It is observed that performance of companies during pre and post recession periods do have some differences- some of the companies are stable in the performance in both the pre and post recession periods. For some other companies, performance decrease during post-recession period. So far the strategy of the company is concerned; it varies from company to company. Some of them are following c*ost leadership strategies* and others are following *differentiation strategy or hybrid strategy*. It is certain that this study will add to the existing pool of knowledge.

8.4 Practical Utility of the Study: The present study as a whole is a fact-finding research on the selected companies from the six industries taken from two sectors, namely-Service sector and Manufacturing sector. Top three industries from each sector are taken for the study. From the Industries, top companies are selected as per average ranking methods and the procedure has discussed in *Research Methodology chapter*. The study established that to be competitive in the industry one should have to identify major cost elements of the firm and have to measure sticky and anti-sticky cost behaviors of variables. Moreover, they have to analyze the impact of cost components on Reported net profit (RNP) and Return on assets (ROA) or any others performance indicators whatever is applicable. By applying this, companies now become able to understand their ideal cost structure. Moreover, the cost efficiency analyses are able to identify benchmark level and slack costs of the companies. Finally, this study is able to identify the efficient & inefficient cost inputs and maximize their efficiency by input output improvement plan. Management can use the findings of the study to reduce the inefficiency in their cost structure and improve their financial position by optimizing the input costs. Therefore, the corporate sector while taking up policy decision can use the findings of the study with or without modifications. The government can use the findings of the study and give proper direction to the industries for optimum utilization of scarce resources, reduce wastage, maintain sustainable growth of the companies and fulfill the mission of cost efficiency without compromising the

quality of products and services. The present study is an addition to the existing literature on cost structure strategies and its influential factors; the scholars who are working in this area will be immensely benefited by it.

8.5 Aid for Future Research: Every attempt has been made to make the study comprehensive but there is a scope for extending this study further. Further work may be undertaken to enhance the scope of analysis. The data for the purpose of the analysis used for twelve years, which may be extended. The entire study of the sample companies is based in India, there is a scope to compare and analyze the leading international companies and their strategies. Further, present study where we have collected secondary data and have applied tools mainly - ABJ regression model, DEA, SBDEA, and modified DuPont model. In order to get the more reliable result other statistical models or mathematical tools can be used on the basis of primary and secondary data from the companies. In this study, we have considered only major cost elements and selected RNP & ROA as the measurement of efficiency and financial performance. Other determinants of efficiency and performance indicators can be added and measurement of such determinants can be done also in an alternative way.