CHAPTER 5:

IMPACT OF COST STRUCTURE ON FIRM PERFORMANCE

5.1 Introduction: In the previous chapter, we have investigated and identified major cost components of sample companies of the respective industries during the study periods. We also analyzed the behaviour of major cost variables. This chapter contains the analysis of objective number two of the study. Panel data set has been covered for 12 years, i.e. starting from FY 2002-03 to FY 2013-14.

5.2 Objective: To study the impact of cost components on firm performance.

5.3 Hypothesis: The null hypothesis is formulated is as follows:

H_{01}: The cost components of the companies across the selected industries have no impact on firm performance.

5.4 Methodology Applied: To study the impact of cost components on the firm performance we have used multiple regression models separately for two depended variables, i.e. RNP (Reported net profit) and ROA (Return on assets) and major cost components are the independent variables. In multiple regression models we have considered only 1 to 5 % (significant 't'value) confidence level. We already discussed in details about methodology in *Chapter 3-Research Methodology*.

5.5 Analysis and Interpretation: The observed results of the regression models have been discussed according to different industries as follows.

5.5.1 IT– Software Industry

To analyze the impact of cost components on firm performances of IT–Software Industry, we have considered Cost of traded software packages, Operating expenses, Employee cost, Selling & Administration expenses, Miscellaneous expenses and Dummy variables as explanatory variables. Selected cost components have covered almost 94.78 % of total cost as on March 2014. Multiple regression model has been used, where x_1=Cost of traded software packages, x_2=Operating expenses, x_3= Employee cost, x_4=Selling & Adm. expenses, x_5= Misce. expenses as quantitative as independent variables and D as the dummy variable,

y = Reported Net Profit (RNP) is dependent variable.

$$y_{it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it+} \beta_3 x_{3it+} \beta_4 x_{4it+} \beta_5 x_{5it+} \beta_6 D_{it} + \mathcal{E}_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

y_1 = Return on Assets (ROA) is the dependent variable.

$$y_{1\,it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it+} \beta_3 x_{3it+} \beta_4 x_{4it+} \beta_5 x_{5it+} \beta_6 D_{it} + \mathcal{E}_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

E (Ɛ) = 0, D = {1 if the year is under post-recession periods (2009-14)

{0 if the year is under pre-recession periods (2003-08)

Here; β_0 is the unsystematic predictable constant component or the estimated constant, i =Selected Computer Software companies, t =is the time lag, it covers total periods (2003-2014).

The results are shown in *table 5.1 and 5.2* respectively using RNP and ROA as dependent variables.

TABLE 5.1: MULTIPLE REGRESSION RESULTS OF IT–SOFTWARE INDUSTRY (RNP AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014.

Companies	Beta Standardized Coefficients						Adj.R Square	F
	Cost of traded Software packages	Operating Expenses	Employee cost	Selling. Adm. Expenses	Miscellaneous Expe.	Dummy Variable		
Wipro	.112(.748)	-.027(.913)	1.077 (.053)	-.013 (.972)	-.410 (.014)	.180 (.271)	.962	47.926(.000)
Vakrangee	.698(.001)	-.753(.000)	1.359 (.000)	-.261(.001)	-.533 (.000)	-.426 (.001)	.993	259.276(.000)
Tech Mahindra	NA	1.597 (.599)	-1.053(.719)	.676 (.346)	-.378 (.328)	-.279 (.629)	.861	14.595(.003)
TCS	-.001(.989)	.527(.001)	.865 (.200)	-.222 (.683)	-.058 (.567)	-.084 (.557)	.984	111.689(.000)
Persistent Sys.	NA	.291 (.045)	.237 (.621)	.433 (.167)	-.244 (.025)	.210 (.348)	.966	64.469(.000)
Oracle Fin. Serv.	NA	-.136 (.188)	.196 (.486)	.347 (.174)	-.188 (.074)	.525 (.022)	.964	59.926 (.000)
Mindtree	.017(.818)	.149 (.210)	1.282 (.019)	-.089 (.805)	-.149 (.435)	-.225 (.331)	.904	18.284(.003)
Infosys	NA	.334 (.033)	-.053 (.824)	.579(.013)	.030 (.548)	.157 (.038)	.99	212.538(.000)
HCL Technologies	.641(.000)	.572(.000)	-.360 (.148)	.181 (.163)	-.124 (.007)	.175 (.022)	.995	352.442(.000)
Cyient	NA	-1.883(.228)	3.006 (.035)	.896 (.384)	-2.469 (.115)	-.012 (.937)	.951	43.905(.000)
Tata Elxsi	-.021(.969)	-.772 .696)	1.690 (.677)	-.475 (.881)	-.537 (.493)	.415 (.614)	.043	1.083 (.475)
3i Infotech	NA	1.010 (.004)	-.585 (.068)	.656 (.018)	-.513 (.050)	.095 (.783)	.805	10.082(.007)
eClerx Services	NA	-0.525(.004)	1.568 (.001)	-0.379 (.036)	-.068 (.277)	0.131 (.270)	.995	440.48(.000)
Financial Tech.	.674(.107)	-0.161(.775)	1.975 (.052)	-0.041 (.952)	-0.562 (.223)	-1.607(.056)	.658	4.531(.059)
Firstsour Solu.	NA	0.14 (.665)	1.92(.042)	-1.047 (.227)	-0.296 (.315)	-0.429 .168)	.847	13.17(.003)
Hexaware Tech.	-1.076 (.072)	-1.364 .157)	2.054 (.063)	-.005(.980)	1.747 (.015)	-.641 (.015)	.858	12.053(.008)
KPIT Tech.	.401 (.020)	0.184 (.181)	0.794 (.018)	-.132 (.422)	-.161 (.354)	.115 (.583)	.923	22.84 (.002)
Lycos Internet	.744(.241)	-0.576(.586)	0.468 (.321)	1.011 (.298)	-.097 (.736)	-.349 (.486)	.737	6.126 (.033)
Polaris Consulta	NA	0.402 (.217)	0.076 (.921)	-.197 (.701)	-0.383 (.091)	.771 (.243)	.803	9.982(.007)
Rolta India	-.138 (.700)	-0.101(.455)	0.453 (.183)	-0.057 (.752)	-1.177 (.000)	.081 (.715)	.952	37.036(.001)
Zensar Tech.	NA	-0.67 (.093)	0.941 (.137)	0.761 (.044)	-0.126 (.604)	-.079 (.591)	.963	58.89 (.000)
IT-Software	-.057(.788)	.769 (.234)	1.748 (.167)	-1.277 (.089)	.125 (.511)	-.397 (.022)	.973	67.380 (.000)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

In table 5.1, standardized coefficients are shown to identify the comparative influence of the explanatory variables on RNP. The β value of Employee cost was

found to be highest and significant for Cyient (3.006) followed by Financial Tech.(1.975), eClerx Services (1.568), Hexaware Tech.(2.054), Vakrangee (1.359), Mindtree (1.282) and Wipro (1.077). It indicates that Employee cost has a significant impact on the RNP of those companies. On the contrary, the negative β value for Employee cost in case of 3i Infotech (β=-.585) indicates the fact that the company's talent pool is not contributing towards its growth of RNP. Similarly, Selling & Admin Expenses have a positive and significant impact on profitability in Zensar Tech. (β=.761), 3i Infotech (β=.656) and Infosys (β=.579); except Vakrangee (β=-.261) and eClerx Services (-0.379). Operating expenses in case of TCS (0.527), HCL Tech (0.572), Persistent Sys. (.291), Infosys (.334) and 3i Infotech (1.010) has a positive and significant impact on the dependent variable, RNP. While, eClerx Services (-.525), Vakrangee (-.753) and Zensar Tech. (-.670) needs urgent steps to control such expenditure. Miscellaneous Expenses have a negative and significant impact on RNP in most of the companies, likes- Wipro, Vakrangee, Persistent Sys., Oracle Fin. Serv., HCL Technologies, 3i Infotech and Rolta India. Dummy Variable in case of Oracle Fin. Serv. (.525), Infosys (.157), HCL Technologies(.175) and Infosys (β=.157) showing the positive and significant impact of the recession on those companies. For Financial Tech(-1.607), Hexaware Tech. (-.641) and Vakrangee (-.426) showing negative and significance impact of the recession.

From the above results, it is evident that only in case of 'Vakrangee Software' the coefficients of all the explanatory variables are statistically significant (.001). For other companies, the influence of some explanatory variables is found to be significant. Thus, based on these contradictory results, the study has used the overall results of the industry during the study period as the basis for testing the null hypothesis. The overall results of software industry indicate that the coefficients of all cost components are insignificant. Hence, the results are sufficient to accept the null hypothesis (H_{01}: cost components of the companies across the selected industries have no impact on firm performance) for all the cost components. Similarly, the observed coefficient of the dummy variable is found to be negative (-.397) and significant (.022). This implies that there is a significant difference between pre and post-recession period in influencing the RNP.

Now, the influences of different cost components on ROA are shown in *table 5.2.*

TABLE 5.2: MULTIPLE REGRESSION RESULTS OF IT–SOFTWARE INDUSTRY (ROA AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014.

Companies	Beta Standardized Coefficients						Adj. R sqr.	F
	Cost of Traded Software Packages	Operating Expenses	Employee cost	Selling. &Adm. Expenses	Misce. Expenses	Dummy Variable		
Wipro	-2.007 (.071)	.266(.691)	2.725 (.062)	-1.938(.090)	-.503 (.152)	-.007(.986)	.733	6.023(.034)
Vakrangee	-1.444(.181)	-.951(.309)	2.407 (.090)	.233 (.578)	-.726 (.316)	.020 (.974)	.238	1.574(.318)
Tech Mahindra	NA	-1.351 (.847)	.475 (.944)	.513 (.750)	.570 (.517)	-.010(.994)	.245	1.714(.265)
TCS	.057(.534)	.410 (.050)	-10.170 (.000)	10.043(.000)	-1.029 (.003)	1.129(.008)	.938	28.605(.001)
Persistent Sys.	NA	.281 (.548)	.838 (.648)	-.957 (.399)	-.041 (.901)	-.957(.271)	.507	3.261(.091)
Oracle Fin. Serv.	NA	.632 (.011)	-2.117 (.006)	-.040(.929)	-.462 (.031)	2.048(.001)	.870	15.783(.002)
Mindtree	.433 (.150)	.074 (.790)	.562 (.578)	.340 (.710)	-.792 (.134)	.459 (.424)	.390	2.172(.206)
Infosys	NA	-.058 (.897)	-1.549 (.101)	.717 (.267)	.378 (.063)	-.296(.205)	.872	16.054(.002)
HCL Technologies	.141(.817)	.816 (.292)	-.716 (.750)	.894 (.461)	.081 (.788)	-.185(.746)	.469	2.62(.155)
Cyient	NA	-15.912(.016)	13.345 (.012)	10.072(.021)	-15.695(.014)	.301 (.563)	.438	2.715(.128)
Tata Elxsi.	-0.398 (.404)	-0.417 (.804)	1.031 (.765)	-0.243(.928)	-0.648(.344)	-0.286(.683)	.303	1.797(.268)
3i Infotech	NA	1 (.001)	-0.642 (.005)	0.537 (.003)	-0.257(.073)	0.040 (.837)	.938	34.287(.000)
eClerx Services	NA	0.412 (.824)	-1.542 (.587)	0.778 (.737)	-0.348 (.709)	0.214 (.903)	.335	0.604(.701)
Financial Tech.	-0.349(.621)	-0.138 (.898)	-0.562 (.724)	-0.026(.984)	-0.224 (.785)	0.362 (.784)	.421	0.606(.721)
Firstsour Solu.	NA	0.478 (.413)	1.081 (.443)	0.366 (.798)	0.333 (.509)	-1.121 (.059)	.524	3.427(.083)
Hexaware Tech.	NA	0.09 (.887)	1.365 (.055)	-0.392(.692)	-0.083 (.798)	-0.457 (.169)	.764	3.894(.064)
KPIT Tech.	0.404(.075)	0.77 (.008)	-0.952 (.040)	-0.505(.079)	0.054 (.830)	0.498 (.154)	.821	9.431(.013)
Lycos Internet	0.706 (.611)	0.418 (.863)	0.922 (.394)	-0.198(.926)	0.046 (.945)	-0.883 (.451)	.352	0.453(.819)
Polaris Consulta	NA	0.055 (.927)	-1.304 (.399)	0.284 (.777)	-0.219 (.578)	1.519 (.240)	.246	1.718(.264)
Rolta India	0.285 (.460)	0.175 (.695)	0.116 (.911)	1.322 (.068)	0.046 (.907)	0.516 (.496)	.454	2.526(.164)
Zensar Tech.	NA	-2.091 (.063)	3.773 (.046)	-0.369 .668)	-1.062 (.143)	-0.029(.941)	.725	6.803(.019)
IT-Software	-0.835	-1.328(.696)	6.264 (.351)	-2.318(.528)	-.655 (.538)	-.809 (.286)	.147	1.317(.390)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

In the above table, we have seen that the observed Adj. R^2 of TCS (0.938), 3i Infotech (0.938), Infosys (0.872), Oracle Fin. Serv. (0.870), KPIT Tech. (0.821), Hexaware Tech (.764), Wipro (.733), Zensar Tech. (0.725), Firstsour.Solu. (0.524) & Persistent Sys. (0.507). Moreover F statistic is significant in most of the cases. The observed values of Adj. R^2 and F-statistic are, thus, sufficient to speak in

favour of the goodness of fit of the regression model of sample companies few cases.

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. Selling & Admin expenses in case of 3i Infotech (β=.537) and TCS (β=10.043) has the positive and significant impact on the dependent variable, ROA. While, Wipro (β= -1.938) and KPIT Tech. (-.505) needs urgent steps to control such expenditure. Similarly, Miscellaneous expenses have the negative impact on ROA in most of the companies but significant only for TCS (β=-1.029), Oracle Fin. Serv.(β=-.462) and 3i Infotech (-0.257). Dummy variables with negative beta and significant level indicates the negative impact of the recession, like Firstsour Solu.(-1.121). But few among the selected companies have positive and significant impact of recession, i.e. Oracle Fin.Serv. (β= 2.048), TCS (β=1.129).

Overall results for the IT-Software industry *(table 5.2)* 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.

5.5.2 Banking Industry

In case of the banking industry, we have considered Interest expended, Employees cost, Operating & Admn. expenses and Other exp. Provision & contingency as the cost components that can influence the response variable (RNP and ROA). Selected cost components have covered almost 98.83 % of total cost as on March 2014. Now, to assess the impact of each of the above cost components on the RNP & ROA, we have used multiple regression models, where x_1= Interest expended, x_2 = Employees cost, x_3 =Operating Admn. expenses, x_4=Other exp. Provision & cont. as quantitative as independent variables and D as dummy variable,

y = Reported Net Profit (RNP) is dependent variable.

$$y_{it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it+} \beta_3 x_{3it+} \beta_4 x_{4it+} \beta_5 D_{it} + \mathcal{E}_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

y_1 = Return on Assets (ROA) is dependent variable.

$y_{1it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it+} \beta_3 x_{3it+} \beta_4 x_{4it+} \beta_5 D_{it} + \mathcal{E}_{it}$ ……..*(4)*

$E(\mathcal{E}) = 0$, D = {1 if the year is under post recession-periods (2009-14)

{0 if the year is under pre recession-periods (2003-08)

Here; β_0 is the unsystematic predictable constant component or the estimated constant, i=Selected Banking companies, t=is time lag, it covers total periods (2003-2014).

The results are summarized in *table 5.3.*

TABLE 5.3: MULTIPLE REGRESSION RESULTS OF BANKING INDUSTRY (RNP AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014.

Companies	Beta Standardized Coefficients					Adj. R sqr.	F
	Interest expended	Employee cost	Operating &Admn. Expenses	Other Exp. Provision & Cont.	Dummy Variables		
ICICI Bank	-0.082(0.827)	1.151(0.087)	-0.037(0.956)	0.018(0.958)	-0.089(0.521)	.935	32.638(.000)
HDFC Bank	0.842(0.007)	0.117(0.867)	0.931(0.109)	-0.823(0.057)	-0.093(0.507)	.984	139.391(.000)
Axis Bank	-0.288(0.335)	2.000(0.045)	-0.948 (0.115)	0.301(0.096)	-0.085(0.211)	.993	317.752(.000)
Canara Bank	-0.762(0.090)	1.298(0.005)	0.450(0.307)	-0.633(0.005)	0.379(0.029)	.956	48.444(.000)
Punjab Natl. Bank	0.661(0.284)	0.547(0.567)	0.056(0.955)	-0.815(0.070)	0.423(0.124)	.884	17.761(.002)
IDBI Bank	0.545(0.073)	2.918(.000)	-2.136(0.002)	-0.321(0.226)	-0.204(0.161)	.968	68.64(.000)
Bank of Baroda	0.061(0.952)	-0.762(0.443)	1.385(0.376)	-0.118(0.733)	0.422(0.123)	.882	17.42(.002)
Union Bank (I)	0.012(0.990)	0.175(0.716)	1.201(0.242)	-0.803(0.216)	0.229(0.565)	.849	13.331(.003)
Bank of India	3.154(0.034)	-0.354(0.557)	-0.23(0.866)	-2.076(0.031)	0.314(0.286)	.846	13.097(.004)
St Bk of India	0.489(0.596)	-1.660(0.351)	1.523(0.372)	0.256(0.738)	0.365(0.201)	.853	13.717(.003)
UCO Bank	-1.211(.432)	.153(.852)	1.703(.314)	-.087(.906)	.329(.548)	.615	4.518 (.047)
Syndicate Bank	.309(.610)	.705(.192)	.681(.342)	-.321(.508)	-.446(.119)	.913	24.148(.001)
Oriental Bank	-2.241(.045)	1.195(.500)	.270(.703)	.621(.499)	1.131(.051)	.842	12.739(.004)
Kotak Mah. Bank	.692(.133)	.315(.758)	-.021(.986)	-.141(.354)	.099(.533)	.955	47.393(.000)
IndusInd Bank	.364(.392)	2.040(.027)	-1.629(.061)	.295(.201)	-.110(.335)	.974	82.477(.000)
I O B	-2.246(.107)	-3.154(.017)	5.245(.002)	-.224(.782)	.466(.307)	.811	10.442(.006)
Corporation Bank	.942(.023)	1.212(.012)	.018(.970)	-1.765(.000)	.100(.452)	.968	66.952(.000)
Andhra Bank	.589(.211)	1.813(.002)	-.529(.176)	-1.545(.001)	.186(.321)	.924	27.912(.000)
Allahabad Bank	.043(.970)	1.471(.174)	.719(.473)	-1.798(.072)	.386(.254)	.658	5.224(.034)
Indian Bank	-2.383(.066)	.579(.359)	1.591(.050)	.379(.538)	.780(.064)	.850	13.470(.003)
Central Bank	.583(.413)	.496(.446)	.458(.621)	-1.808(.003)	-.269(.538)	.760	7.975(.013)
Banking Industry	0.734(0.022)	0.860(0.019)	0.331(0.292)	-1.038(0.002)	0.083(0.327)	.986	157.155(.000)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

The Coefficient of Determination (R^2) of Axis Bank (0.993), Banking Industry (0.986), HDFC Bank (0.984) and Punjab Natl. Bank (0.884), IDBI Bank (.968), Bank of Baroda (.882), Canara Bank (.856), St Bk of India (.853), Union Bank (I)

(.849) and Bank of India (.846) are found to be significantly large indicating the fact that regression is well fitted which is confirmed by the statistically significant F values. Generally, if the significance value of the F statistic is small (smaller than say 0.05) then the independent variables do a good job explaining the variation in the dependent variable. The sample companies where regression is significant, it indicates the fact that management has taken appropriate strategy to leverage their potentiality in leveraging benefits of these expenditures.

The β value of Interest expended was found to be highest (3.154) in case of Bank of India, followed by Corporation Bank (.942), HDFC Bank (0.842) and for the Banking Industry (0.734) overall. It indicates that Interest expended has significant impact on the RNP of those banks and overall banking Industry. In other words, the banking companies could only flourish with Interest expended and thus, such cost needs to be incurred for proper and effective way. On the contrary, the negative β value for Interest expended of Oriental Bank (-.045) significantly indicates the fact that, it's Interest expended is not contributing towards its growth of RNP.

Employee cost in case of IDBI Bank (β=2.918), Axis Bank (β=2.000), Andhra Bank (β=1.813), Canara Bank (β=1.298), Corporation Bank (β=1.212), ICICI Bank (β=1.151) and Banking Industry (β=0.860) have positive impact on dependent variable, RNP. While, IOB (β=-3.154) needs urgent steps to control such expenditure. Similarly, Operating & Admn. expenses have negative impact on profitability in few companies like IDBI Bank (β=-2.136) except, I O B (β=5.245) and Indian Bank (β=1.591). Interestingly, none of the companies have leveraged the benefit of Other Exp. Provision Con. as the β value is negative. On the other hand, β value of Oriental Bank (1.131) indicates positive and significant impact of recession.

In 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 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. On the other hand, the influence of Other expenses, provisions & contingencies on RNP is negative (β=-1.038) and significant (.002). The negative influence indicates that this cost component inversely associated with the

profitability. This is also obvious when banks fail to manage the loan assets efficiently and for higher non-performing assets banks need to make provision, which in turn reduce the profitability of banks. 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.

Now, we look into the results of another regression model where ROA is the dependent variable. The results are shown in *table 5.4.*

TABLE 5.4: MULTIPLE REGRESSION RESULTS OF BANKING INDUSTRY (ROA AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients					Adj. R Sqr.	F
	Interest expended	Employee cost	Operating & Admn. Expenses	Other Exp. Provision Cont.	Dummy Variables		
ICICI Bank	.524 (.575)	.286 (.843)	.327 (.844)	-1.020(.255)	.066(.845)	.608	4.408(.050)
HDFC Bank	1.070 (.094)	1.478 (.421)	0.821(.540)	-2.263(.044)	-.237(.508)	.898	20.426(.001)
Axis Bank	-1.696 (.129)	5.575 (.091)	-3.725(.084)	.444(.437)	.349(.151)	.915	24.801(.001)
Canara Bank	-.204(.834)	1.269(.141)	-1.857(.111)	-.432(.277)	.545(.148)	.729	6.928(.018)
Punjab Natl. Bank	0.333(.700)	.717(.607)	-0.918(.538)	-1.405(.041)	.892(.042)	.751	7.639(.014)
IDBI Bank	2.386(.037)	2.571(.125)	-3.709(.048)	-.430(.629)	-1.090(.053)	.602	4.330(.051)
Bank of Baroda	0.498(.848)	-3.204(.227)	2.327(.554)	-.693(.445)	1.150(.106)	.221	1.622(.285)
Union Bank (I)	2.034(.159)	.074(.908)	-1.533(.265)	-1.815(.059)	.451(.408)	.725	6.806(.018)
Bank of India	4.014(.182)	-1.203(.394)	-.438(.889)	-2.985(.130)	.115(.859)	.182	1.49(.318)
St Bk of India	0.970(.659)	-4.269(.319)	1.607(.685)	.854(.644)	.383(.552)	.155	1.404(.342)
UCO Bank	.098(.974)	.704(.668)	-1.247(.701)	-.091(.951)	.443(.683)	.166	0.238(.931)
Syndicate Bank	1.008(.431)	1.046(.334)	-2.276(.148)	-.268(.787)	-.183(.732)	.626	4.681(.043)
Oriental Bank	-2.312(.052)	.448(.812)	-1.598(.071)	1.871 (.091)	1.024 (.087)	.816	10.751(.006)
Kotak Mah. Bank	2.097(.304)	.739(.877)	-2.971(.607)	-.111(.872)	.629(.406)	.003	1.007(.486)
IndusInd Bank	1.212(.532)	6.145(.108)	-7.344(.067)	.470(.638)	.035(.945)	.437	2.709(.129)
I O B	-1.448(.045)	-1.793(.009)	1.877(.010)	.403(.325)	.028(.894)	.956	48.425(.000)
Corporation Bank	1.520(.067)	.953(.251)	-3.098(.023)	-.335(.430)	.103(.717)	.846	13.066(.004)
Andhra Bank	-.058(.860)	1.363(.002)	-2.149(.000)	-.095(.644)	.116(.404)	.957	50.373(.000)
Allahabad Bank	-1.482(.449)	.934(.573)	.941(.565)	-.823(.565)	-.233(.661)	.074	1.175(.418)
Central Bank	.141(.877)	.861(.322)	-.638(.600)	-1.128(.060)	-.085(.880)	.587	4.122(.057)
Indian Bank	-4.297(.026)	1.286 (.162)	2.934(.017)	-.341(.686)	.318(.529)	.713	6.467(.021)
Banking Industry	2.803 (.073)	1.316(.404)	-2.766(.124)	-2.229(.088)	.194(.660)	.593	4.206(.055)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

The Coefficient of Determination (R^2) of the selected Banks and Banking Industry (0.593) are found to be significantly large indicating the fact that regression is well fitted which is confirmed by the statistically significant F values. From, the above table it has been found that the independent variables considered in the model have explained more than 60% variation in the return on assets (ROA) of sample companies except State Bank of India (.155), Bank of India (.182), UCO Bank (.166), Kotak Mah. Bank (.030), IndusInd Bank (.437), Bank of Baroda (.221) and IndusInd Bank (.074). Selected sample banks, where regression is significant, it indicates the fact, that management has taken appropriate strategy to leverage their potentiality in leveraging benefits of these expenditures.

The β value of Interest expended was found to be highest (4.014) in case of Bank of India (but adj.R^2 is not well fitted and β value is insignificant), but, IDBI Bank (2.386) is the only bank where β value is significant impact on the ROA of the banks. On the contrary, the negative β value of Oriental Bank (-2.312), IOB (-1.448) for Interest expended in case of (-0.204), indicates the fact that the bank's Interest expended are not contributing towards its growth of ROA. On other words, the banking companies could only flourish with Interest expended and thus, such cost needs to be incurred on proper and effective way.

Employee cost in case of Andhra Bank (β=1.363) has positive and significant impact on dependent variable, ROA. While I O B (β=-1.793) needs urgent steps to control such expenditure. Similarly, Operating and Admn. expenses have negative impact on ROA, like- IDBI Bank (β=-3.709), Corporation Bank (β=-3.098), Andhra Bank (-2.149), except, IOB (β=1.877) and Indian Bank (2.934). Interestingly, none of the selected banks has leveraged the benefit of Other exp. and Provision Con. as the β value is negative. The beta value of Punjab Natl. Bank (.892) indicates positive impact of recession, on the other hand, IDBI Bank (-1.090) negative impact of recession.

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. Likewise, the negative influence of Other expenses.provisions & contingency is statistically insignificant.

However, 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_{01}: cost components of the companies across the selected industries have no impact on firm performance) is accepted for all cost components.

5.5.3 Finance Industry

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 as explanatory variables. Selected cost components have covered almost 99.45 % of total cost as on March 2014. In Finance industry, we have analyzed the multiple regression model with x_1=Operating & Admn. expenses, x_2= Miscellaneous expenses, x_3=Interest expenses, x_4=Employees cost as quantitative as independent variables and D as dummy variable,

y = Reported Net Profit (RNP) is dependent variable.

$$y_{it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 D_{it} + \mathcal{E}_{it} \ldots\ldots (5)$$

y_1 = Return on Assets (ROA) is dependent variable.

$$Y_{1it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 D_{it} + \mathcal{E}_{it} \ldots\ldots (6)$$

$E(\mathcal{E}) = 0,$ D = {1 if the year is under post-recession periods (2009-14)

{0 if the year is under pre-recession periods (2003-08)

Here; β_0 is the unsystematic predictable constant component or the estimated constant, i=Selected Financial companies, t=is time lag, it covers total periods (2003-2014).

The results are shown in *table 5.5 and 5.6* respectively using RNP and ROA as dependent variables.

TABLE 5.5: MULTIPLE REGRESSION RESULTS OF BANKING INDUSTRY (RNP AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients					Adj. R sqr.	F
	Operating & Adm. Expenses	Misce. Expenses	Interest	Employee cost	Dummy Variables		
Bajaj Fin.	-.230(.635)	-.529(.058)	.453(.301)	1.213(.147)	.056(.665)	.978	99.244(.000)
H D F C	.103(.652)	.066(.819)	-.339(.385)	1.130(.065)	.043(.605)	.979	103.243(.000)
I D F C	.283(.290)	.149(.277)	.199(.381)	.472(.050)	-.080(.433)	.986	155.446(.000)
IFCI	-.138(.755)	-1.095(.008)	-.008(.971)	.076(.689)	-.165(.675)	.683	5.734(.028)
LIC Housing Fin.	.290(.551)	.059(.346)	-.143(.697)	.734(.182)	.120(.331)	.970	72.352(.000)
Power Fin.Corpn.	.178(.523)	-.160(.639)	1.269(.033)	-.173(.614)	-.197(.352)	.923	27.302(.000)
Reliance Capital	-1.150(.507)	-.138(.719)	-.958(.199)	2.317(.123)	.349(.764)	.575	3.972(.062)
Rural Elec.Corp.	-.072(.464)	-.207(.129)	1.333(.000)	-.107(.413)	-.010(.898)	.991	241.644(.000)
Shri.City Union.	.510(.011)	-.153(.770)	.085(.834)	.454(.199)	.161(.151)	.984	138.179(.000)
Shriram Trans.	-.354(.126)	-.155(.381)	.246(.379)	1.201(.000)	.049 (.626)	.991	249.121(.000)
Tata Inv. Corpn.	.562(.182)	.357(.400)	-.338(.348)	.267(.589)	-.402(.477)	.552	3.706 (.071)
Sundaram Finance	-.142(.806)	.072(.655)	-.699(.481)	1.877(.049)	-.149(.548)	.931	30.58(.000)
SREI Infra. Fin.	.035(.962)	1.429(.265)	-2.713(.036)	1.085(.200)	.959(.282)	.458	2.861(.117)
Magma Fincorp.	1.870(.201)	-.518(.432)	.139(.895)	-.501(.803)	-.080(.818)	.909	23.087(.001)
Manappuram Fin.	3.685(.172)	.173(.822)	3.307(.200)	-6.182(.242)	-.074(.855)	.731	6.971(.017)
Religare Enterp.	1.190(.263)	-1.553(.013)	-.679(.213)	-1.096 (.199)	.201(.119)	.981	112.867(.000)
GRUH Finance	.324(.014)	.001(.943)	-.082(.547)	.777 (.007)	-.019(.526)	.997	811.275(.000)
Edelweiss Fin.	-.296(.552)	.294(.320)	.203(.576)	.793 (.106)	.066(.865)	.705	6.269(.022)
Cholaman.Inv.& Fn.	-.249(.514)	-.242(.256)	1.543(.003)	.063(.937)	-.296(.022)	.981	116.996(.000)
Capri Global	-.010(.948)	.100(.695)	.126(.424)	-.736(.110)	1.480(.002)	.880	17.192(.002)
Bajaj Holdings	1.890(.122)	.101(.905)	-.200(.643)	-.757(.588)	.605(.234)	.341	2.141(.191)
Finance Industry	.183(.365)	-1.478(.125)	1.402(.157)	1.194(.075)	-.343(.186)	.917	25.395(.001)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

From the above table, it has been found that the independent variables considered in the model have explained more than 90% variation in the Reported Net Profit (RNP) of sample companies, i.e. Reliance Capital (0.575) and IFCI (0.683), Tata Inv. Corpn (0.552), SREI Infra. Fin. (.458) and Bajaj Holdings (0.341). Hence, Operating & admn. expenses, Miscellaneous expenses, Interest expenses, Employees cost and Dummy variables are perfectly explaining the variations in the Reported Net Profit of the firm. It is found to be significantly large adjusted R^2 indicating the fact that regression is well fitted which is confirmed by the statistically significant F values. The sample companies where regression is

significant, it indicates the fact that management has taken appropriate strategy to leverage their potentiality in leveraging benefits of these expenditures.

The β value of Interest expenses was found to be highest in case of Cholaman.Inv.& Fn.(1.543) followed by Rural Elec. Corp. (1.333) and Power Fin. Corpn (1.269). It indicates that Interest expenses have significant impact on the RNP of those companies. In other words, the companies could only prosper with Interest expenses and thus, such cost needs to be incurred for proper and effective way. Employee cost of Finance Industry (β=1.194) is positive and significant impact on RNP, with others selected sample companies, i.e. Sundaram Finance (β=1.877), Shriram Trans (β=1.201) and GRUH Finance (β=.777); while, none of the companies needs urgent steps to control such expenditure as we have seen that negative beta value with significant. However, Miscellaneous expenses have negative impact along with significant on profitability in companies likes, IFCI (β=-1.095), Bajaj Fin. (β= -.529) and Religare Enterp. (β=-1.553); none of the companies are positive and significant of these cost component. Interestingly, none of the companies have leveraged the benefit of Operating and Adm. expenses as the β value are negative, except Shri. City Union (β=0.510) and GRUH Finance (β=0.324). Among the selected companies, beta value of Cholaman Inv. & Fin. (-.296) indicates negative and significant impact of recession; but, beta value of Capri Global (1.480) indicates positive and significant impact of recession.

From the aforesaid observations we find that influence of some explanatory variables is found to be significant and also some explanatory variables are insignificant for selected companies. Thus, based on these contradictory results, the study has used the overall results of the industry during the study period as the basis for testing the null hypothesis. The overall results of Finance industry indicate that the coefficients of all cost components are insignificant. Thus, the null hypothesis (H_{01}) i.e. there is no impact of cost component of RNP is accepted. Similarly, the observed coefficient of 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.

Now, the influences of different cost components on ROA are shown in *table 5.6.*

TABLE 5.6: MULTIPLE REGRESSION RESULTS OF FINANCE INDUSTRY (ROA AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients					Adj. R sqr.	F
	Operating& Adm. Expenses	Miscellaneous Expenses	Interest	Employee cost	Dummy Variables		
Bajaj Fin.	-5.044(.089)	-2.795(.062)	.445(.843)	6.911(.129)	.140(.840)	.363	2.256(.175)
H D F C	-3.113(.051)	.218(.896)	.115(.959)	2.743(.386)	.181(.707)	.274	1.83(.241)
I D F C	-.160(.934)	1.145(.272)	-1.934(.270)	.272(.858)	.142(.849)	.195	1.534(.307)
IFCI	-.235(.406)	-1.085(.001)	-.185(.229)	.314(.031)	-.012(.962)	.876	16.607(.002)
LIC Housing Fin.	-.014(.996)	.034(.935)	-.639(.797)	-.144(.967)	.688(.408)	.246	0.391(.839)
Power Fin.Corpn.	.446(.679)	-.482(.717)	.854(.653)	-1.053(.440)	-.404(.616)	.352	0.652(.673)
Reliance Capital.	-1.686(.484)	-.242(.651)	-1.109(.273)	1.695(.381)	.701(.666)	.183	1.491(.318)
Rural Elec.Corp..	-1.598(.169)	-.176(.897)	1.093(.618)	.573(.686)	.127(.885)	.389	.763(.608)
Shri.City Union.	-.359(.801)	1.197(.812)	-1.431(.715)	.664(.834)	.318(.747)	.202	.304(.894)
Shriram Trans.	-2.430(.161)	-.198(.880)	.101(.961)	1.840(.168)	1.028(.205)	.488	3.094(.101)
Bajaj Holdings	.664(.696)	.134(.918)	-.268(.686)	.033(.988)	.580(.442)	.146	0.205(.949)
Capri Global	-.475(.014)	-.342(.180)	-.253(.115)	-1.306(.012)	2.389(.000)	.897	20.082(.001)
Cholaman.Inv.& Fn.	.824(.578)	.307(.696)	4.252(.014)	-5.037(.140)	-.470(.258)	.717	6.579(.020)
Edelweiss.Fin.	.845(.348)	-.045(.928)	-.477(.461)	-1.203(.155)	.196(.775)	.077	1.183(.415)
GRUH Finance.	1.278(.154)	.043(.780)	-1.897(.129)	1.071(.532)	.394(.138)	.812	10.486(.006)
Religare Enterp.	.907(.926)	-.529(.906)	-.523(.916)	-.817(.915)	.259(.817)	.014	0.017(.979)
Manappuram Fin.	2.806(.624)	.317(.857)	2.442(.658)	-5.709(.620)	-.206(.824)	.231	0.360(.859)
Magma Fincorp.	2.803(.469)	-1.266(.488)	2.557(.401)	-5.126(.377)	.327(.737)	.295	1.919(.225)
SREI Infra. Fin.	.104(.884)	2.328(.091)	-2.980(.025)	-.098(.900)	.522(.541)	.464	2.904(.113)
Sundaram Finance	-.455(.818)	-.160(.769)	-1.745(.601)	3.235(.259)	-.335(.689)	.199	1.548(.303)
Tata Inv.Corpn.	.419(.233)	.215(.544)	-.039(.895)	.032(.938)	-1.262(.031)	.676	5.597(.029)
Finance Industry	.290(.704)	-2.951(.395)	1.760(.620)	1.977(.394)	-.963(.321)	.320	0.565(.726)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

The Coefficient of Determination (R^2), in IFCI (0.876), Capri Global (.897), GRUH Finance (.812), Cholaman Inv. & Fin. (.717) and Tata Inv.Corpn (.676) is found to be significantly large indicating the fact that regression is well fitted which is confirmed by the statistically significant F values. In other words, the independent variables are not perfectly explaining the variations in the return on assets (ROA) of the firms.

The β value of Interest expenses is (4.252) for Cholaman Inv. & Fin. is positively and significantly impact on ROA. Beta value of Operating & Admn. expense is

negative (-.475) for Capri Global. Again, Miscellaneous expenses of IFCI (-1.085) is negative and significant impact on ROA. The beta value of Employees cost for IFCI (.314) is positive and for Capri Global it is negative (-1.306), both are significant. There are significant impact of recession for Capri Global (2.389) and negative beta value Tata Inv. Corpn. (-1.262).

From the aforesaid discussion on companies we got mixed results, so we have considered overall results for the Finance industry. Coefficient of cost components indicates that none of the coefficient of cost components is found to be statistically significant on ROA. 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.

5.5.4 Refineries Industry

In the case of Refineries Industry, we have considered Raw Materials cost, Power & Fuel Cost, Other Mnf. expenses, Selling and Adm. expenses, Miscellaneous expenses, Interest and Dummy variables as cost components that can influence the response variable, i.e. reported net profit (RNP) and return on assets (ROA). Selected cost components have covered almost 97.62 % of total cost as on March 2014.

The multiple regression model, where x_1=Raw materials, x_2=Power & Fuel cost, x_3= Other Mnf. expenses, x_4=Selling & Adm.expenses, x_5= Misce. expenses, x_6=Interest as quantitative as independent variables and D as dummy variable,

y = Reported Net Profit (RNP) is dependent variable.

$$y_{it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 x_{5it} + \beta_6 x_{6it} + \beta_7 D_{it} + \mathcal{E}_{it} \ldots\ldots\ldots\ldots\ldots\ldots (7)$$

y_1 = Return on Assets (ROA) is dependent variable.

$$Y_{1it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 x_{5it} + \beta_6 x_{6it} + \beta_7 D_{it} + \mathcal{E}_{it} \ldots\ldots\ldots\ldots\ldots\ldots (8)$$

$E(\mathcal{E}) = 0$, D = {1 if the year is under post-recession periods (2009-14)

{0 if the year is under pre-recession periods (2003-08)

Here; β_0 is the unsystematic predictable constant component or the estimated constant, i=Selected Refineries companies, t=is the time lag, it covers total periods (2003-2014).

The results are shown in *table 5.7and 5.8* respectively using RNP and ROA as dependent variables.

TABLE 5.7: MULTIPLE REGRESSION RESULTS OF REFINERIES INDUSTRY (RNP AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients							Adj. R sqr.	F
	Raw Materials cost	Power & Fuel Cost	Other Manuf. Expenses	Selling & Adm. Exp.	Misce. Exp.	Interest	Dummy Variables		
RIL	0.703(.411)	0.171(.561)	1.178(.045)	-0.370(.332)	0.152(.344)	-0.783(.182)	-0.078(.793)	.913	17.414(.008)
MRPL	.149(.698)	.436(.304)	-.917(.022)	-.419(.188)	-.292(.175)	-1.331(.008)	-.172(.709)	.844	9.485(.023)
IOCL	5.050(.366)	2.254(.295)	-1.619(.562)	-2.372(.631)	-.134(.747)	-3.975(.155)	.619(.350)	.332	1.780(.302)
HPCL	-1.467(.750)	-.235(.885)	-1.142(.741)	3.007(.628)	-.475(.763)	-.868(.665)	.771(.794)	.338	.291(.926)
Essar Oil	-12.659(.118)	8.155(.054)	-1.202(.055)	-1.715(.358)	-.540(.020)	3.810(.159)	4.475(.064)	.954	33.672(.002)
CPCL	1.145(.496)	-.395(.511)	-.892(.267)	.438(.604)	-.614(.188)	-.827(.370)	.044(.937)	.561	3.012(.152)
BPCL	-3.316(.691)	.469(.873)	1.438(.338)	2.528(.821)	.332(.892)	.350(.762)	-1.095(.653)	.481	2.459(.201)
Refineries Industry	1.219(.507)	0.23(.686)	2.151(.100)	-1.577(.258)	-.136(.637)	-1.199(.177)	-.192(.544)	.829	8.625(.027)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

In *table 5.7,* standardized coefficients are shown to identify the comparative influence of the significant variables on RNP. Results show that in the case of Refineries Industry two cost components namely, Raw materials cost (1.219) and Other Mnf. expenses (2.151) are positively influence the RNP but insignificant. The observed Adj. R^2 shows that the independent variables considered in the model have explained variation in the RNP for selected five sample companies, where regression models are well fitted. The beta value of Raw materials was found to be highest for IOCL (5.050) followed by Refineries Inds. (1.219), CPCL (1.145) and RIL (0.703), but Raw materials of all the companies are not significant. Other Mnf. expenses in case of RIL (1.178) have the positive impact on dependent variable, RNP. While, Essar Oil (-1.202) and MRPL (-.917) needs urgent steps to control such expenditure. Similarly, Selling & Admin expenses have the negative impact on profitability in most of the companies. Interestingly, none of the companies have leveraged the benefit of Interest as the β value is either negative or less than 1.0 but significant only for MRPL (-1.331).

From the results of above companies, it is evident that the influence of some explanatory variables is found to be significant and others are insignificant. Thus,

based on these contradictory results, the study has used the overall results of the industry during the study period as the basis for testing the null hypothesis. Overall results for the Refineries industry indicate that none of the coefficient of cost components is found to be statistically significant. 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.

Now, we look into the results of another regression model where ROA is the dependent variable. The results are shown in *table 5.8.*

TABLE 5.8: MULTIPLE REGRESSION RESULTS OF REFINERIES INDUSTRY (ROA AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients							Adj. R sqr.	F
	Raw Materials	Power & Fuel Cost	Other Manuf. Exp.	Selling Adm. Expenses	Misce. Exp.	Interest	Dummy Variables		
RIL	0.078(0.965)	-0.124(0.842)	0.799(0.418)	0.18(0.815)	0.082(0.802)	-0.724(0.527)	-0.999(0.173)	.592	3.283(0.134)
MRPL	-.462(.155)	.830(.038)	-.381(.110)	-.676(.026)	-.008(.954)	-1.625(.001)	-.977(.037)	.915	17.864(0.007)
IOCL	2.846(.401)	2.395(.105)	.262(.875)	-4.290(.200)	.136(.599)	-2.321(.171)	.241(.538)	.749	5.699(.056)
HPCL	.521(.867)	-.802 (.480)	-2.178(.374)	1.154(.781)	-.311(.770)	-1.718(.244)	2.072(.330)	.165	1.311(.419)
Essar Oil	-7.847(.412)	6.482(.185)	.797(.255)	.892(.708)	-1.073(.005)	-2.470(.452)	3.458(.218)	.917	18.391(.007)
CPCL	1.330(.357)	-.206(.676)	-.814(.232)	.116(.867)	-.664(.110)	-.813(.301)	-.173(.713)	.694	4.567(.080)
BPCL	-9.289 (.366)	1.647(.637)	-.251(.879)	7.274(.586)	1.803(.539)	.990(.479)	-2.335(.428)	.283	1.621(.335)
Refineries Industry	-2.920(.219)	1.229(.125)	2.328(.127)	-1.085(.486)	.111(.744)	.227(.809)	-.692(.118)	.755	5.837(.054)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

The observed Adj. R^2 in Essar Oil (0.917), MRPL (0.915), Refineries Industry (0.755), IOCL (0.749) & CPCL (0.694), RIL (0.592). F-statistic is significant at 1 percent level for each run of the regression model. The observed values of Adj. R^2 and F-statistic are, thus, sufficient to speak in favour of the goodness of fit of the regression model of sample companies, except, HPCL and BPCL. In other words, the independent variables are perfectly explaining the variations in the Return on Assets (ROA) of the firms.

The β value of Selling & Admin expenses was found to be highest (7.274) in the case of BPCL followed by HPCL (1.154) and Essar Oil (0.892) but insignificant. On the contrary, the negative β value for employee cost in case of MRPL (-.676) indicates the fact that the company's talent pool is not contributing towards its

growth of ROA. Raw materials in the case of BPCL (β= -9.289), Essar Oil (β= -7.847), Refineries Industry (β= -2.920) and MRPL (β= -.462), have negative impact on dependent variable, ROA, but insignificant. Similarly, Miscellaneous expenses have negative impact on profitability of Essar Oil (β= -1.073) and it needs urgent steps to control Miscellaneous expenses. Interest Expenses also have a negative or very low impact, i.e. MRPL (β= -1.625). In Refineries Industry dummy variables has negative beta value (β= -.692), it indicates the negative impact of the recession. But none of the selected companies have positive and significant impact on the recession.

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, i.e. cost components of the companies across the selected industries have no impact on firm performance.

5.5.5 Power Generation & Distribution Industry

To analyze the impact of cost structure of the firms performances on this Industry, we have considered variables such as; Electricity Fuel expenses, Operating expenses, Employee cost, Selling & Administration expenses, Miscellaneous expenses, Interest expenses and Dummy variables. Selected cost components have covered almost 91.79 % of total cost as on March 2014. Here, we used multiple regression model with x_1 =Electricity & Fuel expenses, x_2= Operating expenses, x_3 = Employee cost, x_4 =Selling & Administration epenses, x_5=Miscellaneous expenses, x_6=Interest as quantitative as independent variables and D as dummy variable,

y = Reported Net Profit (RNP) is dependent variable.

$$y_{it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 x_{5it} + \beta_6 x_{6it} + \beta_7 D_{it} + \mathcal{E}_{it} \ldots\ldots\ldots\ldots\ldots\ldots (9)$$

y_1 = Return on Assets (ROA) is dependent variable.

$$Y_{1it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2\,it} + \beta_3 x_{3\,it} + \beta_4 x_{4it} + \beta_5 x_{5it} + \beta_6 x_{6it} + \beta_7 D_{it} + \mathcal{E}_{it} \ldots\ldots\ldots\ldots\ldots (10)$$

$E(\mathcal{E}) = 0$, D = {1 if the year is under post-recession periods (2009-14)

{0 if the year is under pre-recession periods (2003-08)

Here; β_0 is the unsystematic predictable constant component or the estimated constant, i=Selected Power generation companies, t=is the time lag, it covers total periods (2003-2014).

The results are shown in *table 5.9 and 5.10* respectively using RNP and ROA as dependent variables.

TABLE 5.9: MULTIPLE REGRESSION RESULTS OF POWER GENERATION & DISTRIBUTION INDUSTRY (RNP AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients							Adj. R sqr.	F
	Electricity Fuel Expenses	Operating Expenses	Employees cost	Selling. &Adm. expenses	Miscellaneous Expenses	Interest	Dummy Variable		
CESC	.469(.197)	.436(.257)	.223(.318)	.042(.720)	-.012(.839)	-.383(.050)	-.007(.945)	0.984	98.918(.000)
Guj Inds. Power	-.443(.545)	-.513(.524)	1.015(.073)	-.014(.972)	.280(.202)	-.436(.240)	-.242(.607)	0.719	5.018(.069)
JSW Energy	-1.842(.120)	-.633(.146)	5.558(.002)	.314(.344)	-.628(.278)	-1.318(.256)	-1.668(.016)	0.908	16.587(.008)
Lanco Infratech	-.246(.000)	1.986(.000)	.116(.005)	-.861(.000)	-.851(.000)	.411(.000)	-.879(.000)	.989	22776.28(.000)
Neyveli Lignite	.317(.518)	-.819(.407)	.710(.680)	.499(.263)	.187(.595)	.009(.984)	.188(.814)	0.577	3.146(.142)
NTPC	-1.458(.387)	2.024(.145)	.459(.658)	-.409(.432)	-.304(.204)	.128(.372)	.258(.525)	0.849	9.861(.022)
NHPC	.183(.558)	.407(.411)	.260(.485)	.056(.773)	-.887(.267)	-.019(.974)	.688(.076)	0.769	6.235(.048)
Power Grid Corpn.	.081(.370)	-.205(.697)	.290(.558)	.438(.223)	-.043(.615)	.572(.395)	-.161(.434)	0.956	35.414(.002)
Reliance Infra.	.361(.279)	.548(.002)	.418(.363)	.046(.859)	.051(.794)	.260(.049)	-.540(.125)	0.976	64.777(.001)
Tata Power Co.	.181(.851)	-.184(.822)	1.026(.574)	.068(.918)	.076(.832)	-.784(.358)	.566(.315)	0.824	8.356(.029)
Potis Power	-.127(.806)	.124(.717)	-.249(.568)	.182(.778)	1.050(.039)	.117(.836)	.506(.184)	0.777	6.482(.045)
BF Utilities	.650(.198)	-.217(.535)	.479(.315)	-.468(.390)	-.280(.578)	-.404(.446)	-.482(.319)	0.086	1.148(.474)
India Power Corp.	1.090(.339)	1.321(.184)	-.138(.726)	1.560(.322)	-.456(.530)	-.985(.335)	.185(.701)	0.783	6.680(.043)
T C P	.015(.995)	2.450(.070)	-2.564(.322)	-.300(.650)	-.538(.341)	-.746(.218)	.876(.218)	0.310	1.706(.317)
Energy Devl.Co.	-.271(.653)	.507(.082)	.032(.981)	1.245(.225)	-.120(.684)	-.656(.289)	-.599(.302)	0.766	6.147 (.049)
Indowind Energy	.174(.755)	.598(.375)	-.330(.832)	.169(.835)	.353(.392)	1.069(.120)	-.708(.720)	0.111	1.197(.456)
Monnet Inter.	-.245(.191)	.232(.184)	-.243(.105)	.199 (.166)	-.928(.002)	.335(.133)	-.825(.013)	0.936	24(.004)
Power Gen. &Dist. Industry	.266(.898)	-.305(.803)	-2.205(.536)	2.342(.160)	-.648(.603)	-.773(.377)	1.007(.423)	0.454	2.309(.219)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

In *table 5.9,* standardized coefficients are shown to identify the comparative influence of the significant variables on RNP. In order to test the goodness of fit of the regression model, Adj. R^2 and F-statistic are shown in the table. The observed Adj. R^2 shows that the independent variables considered in the model have explained more than 50% variation in the RNP for selected companies where regressions are significant, except BF Utilities (.086), TCP (.310), Indowind Energy (.111) and Power Gen.& Dis. Industry (0.454).

The beta value of Electricity & Fuel expenses was found to be highest for CESC (0.469) followed by Neyveli Lignite (0.317) and Reliance Infra. (0.361);but insignificant. On the contrary, the 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 case of Lanco Infratech (1.986), Energy Devl.Co. (.507) and Reliance Infra (0.548) have a positive and significant impact on dependent variable, RNP. The beta value of Miscellaneous expenses has negative and significant effect on Lanco Infratech (-.851) and positive and significant impact on Potis Power (1.050). Beta value of Interest expenses is positive and significant for Lanco Infratech (.411) and Reliance Infra. (0.260). On the contrary, the negative beta value of Interest expenses of CESC (-.383) indicate that, need to control such expenditure.

From the above results, it is evident that only in case of Lanco Infratech the coefficient of all the explanatory variables is statistically significant. For other companies, the influence of some explanatory variables is found to be significant. Hence, the results are sufficient to reject the null hypothesis ($H_{01:}$ cost components of the companies across the selected industries have no impact on firm performance). However, 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 for all other cost components. Thus, based on these contradictory results, the study has used the overall results of the industry during the study period as the basis for testing the null hypothesis. Overall results for the Power Gen. & Dist. industry indicate that none of the coefficient of cost components is found to be statistically significant. 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.

Now, the influences of different cost components on ROA are shown in table *5.10.*

TABLE 5.10: MULTIPLE REGRESSION RESULTS OF POWER GENERATION & DISTRIBUTION INDUSTRY (ROA AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients							Adj. R sqr.	F
	Electricity & Fuel Expenses	Operating Expenses	Employees cost	Selling &Adm. Expenses	Miscell. Expenses	Interest	Dummy Variable		
CESC	.398(.621)	-.060(.945)	.577(.295)	.221(.453)	-.036(.798)	-1.058(.035)	-.035(.884)	.905	15.986(.009)
Guj Inds. Power	-.140(.809)	-.147(.817)	.578(.163)	.454(.214)	.402(.054)	-1.036(.015)	-.682(.123)	.817	7.994(.031)
JSW Energy	-2.338(.107)	-.393(.407)	5.889(.003)	1.359(.018)	.662(.334)	-3.613(.039)	-2.248(.011)	.867	11.239(.017)
Lanco Infratech	-.147(.891)	1.556(.393)	-.811(.650)	-.435(.731)	-.450(.534)	.090(.947)	-.538(.668)	.557	2.973(.155)
Neyveli Lignite	-.013(.988)	-.699(.670)	-.316(.914)	.969(.217)	.612(.335)	-.791(.352)	.236(.863)	.543	0.679(.693)
NTPC	-2.578(.382)	1.862(.396)	.719(.691)	-.880(.343)	-.799(.085)	.131(.588)	-.173(.803)	.539	2.837(.165)
NHPC	-.201(.638)	.618(.371)	.162(.747)	.068(.798)	-1.172(.286)	.171(.833)	.830(.106)	.558	2.986(.154)
Power Grid Corpn.	-.393(.197)	-.186(.911)	4.355(.039)	-1.336(.238)	.120(.658)	-1.138(.583)	-1.408(.075)	.561	3.005(.152)
Reliance Infra.	2.132(.043)	1.161(.004)	-1.234(.299)	-.538(.429)	-.223(.652)	-.269(.320)	-1.046(.213)	.845	9.589(.023)
Tata Power Co.	-1.454(.407)	-2.138(.184)	2.343(.466)	-.605(.603)	-.279(.656)	.628(.658)	.084(.927)	.468	2.383(.210)
Monnet Inter.	-.752(.167)	.094(.831)	.031(.930)	.386(.315)	-.437(.309)	.146(.789)	-1.077(.127)	.476	2.429(.204)
Indowind Energy	-.001(.998)	.477(.232)	-.795(.388)	-.199(.667)	-.182(.431)	.862(.048)	-.636(.573)	.717	4.98(.070)
Energy Devl.Co.	-1.019(.081)	.478(.050)	2.194(.092)	-.156(.831)	-.055(.809)	-1.313(.036)	-1.010(.064)	.855	10.299(.020)
T C P	-.475(.853)	1.137(.310)	-1.095(.650)	-.810(.250)	-.407(.453)	-.953(.131)	.743(.277)	.332	1.779(.302)
India Power Corp.	2.135(.494)	2.414(.359)	-.569(.612)	1.163(.781)	-1.374(.505)	-1.165(.671)	.358(.792)	.369	0.334(.902)
BF Utilities	1.081 (.015)	-.099(.647)	-.136(.631)	.136(.678)	-.106(.732)	-.122(.705)	-.163(.571)	.643	3.826(.106)
Potis Power	-1.156(.226)	1.323(.068)	-.529(.474)	1.676(.174)	.141(.821)	-.384(.687)	.873(.173)	.376	1.946(.271)
Power Gen. &Dist. Industry	.948(.385)	.196(.748)	-2.892(.151)	1.059(.195)	-.961(.170)	.020(.961)	.767(.247)	.863	10.929(.018)

Note: 'Significant' levels are shown in parenthesis.

Source: Complied and calculated by the researcher

The observed Adj. R^2 in Power Gen.& Dis. Industry is 0.863 and other sample companies are as follows The observed values of Adj. R^2 and F-statistic are, thus, sufficient to speak in favour of the goodness of fit of the regression model of above sample companies and overall Power Gen. & Dis. Industry. In other words, the independent variables are perfectly explaining the variations in the ROA of the firms.

The β value of Electricity & Fuel expenses was found to be highest (2.132) in case of Reliance Infra., indicates that it has significant impact on the ROA of the company. Selling & Admin expenses in the case of JSW Energy (β=1.359) have positive and significant impact on dependent variable, ROA. Similarly, Operating expenses have positive impact on ROA in most of the companies like; Reliance

Infra (β=1.161) and Energy Devl. Co. (β=.478). Employees cost also have the positive and significant impact, i.e. JSW Energy (β=5.889) and for Miscell. expenses have positive and a significant effect on Guj Inds. Power (.402). Beta value of Interest expenses has negative and significant impact of the following companies like; JSW Energy (-3.61 3), CESC(-1.058), Guj.Inds.Power (-1.036) and Energy Devl.Co.(-1.313),which indicates, need to control this expenditure. The Beta value of Dummy variables has negative and significant impact for JSW Energy (β=-2.248).

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 (i.e. cost components of the companies across the selected industries have no impact on firm performance) as cost components of the selected industry have no impact on ROA.

5.5.6 Steel Industry

In Steel Industry, we have considered Raw materials, Power & Fuel cost, Other Mnf. expenses, Employees cost, Selling and Adm. expenses, Interest and Dummy variables as the cost components that can influence the response variable (RNP and ROA). Selected cost components have covered almost 92.77 % of total cost as on March 2014. In Steel industry**,** we run multiple regression model where, x_1 = Raw materials, x_2 = Power & Fuel cost, x_3 =Other Manufacturing expenses, x_4= Selling and Adm. expenses as quantitative as independent variables and D as dummy variable, y =Reported Net Profit (RNP) is dependent variable.

$y_{it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 D_{it} + \mathcal{E}_{it}$……………………………………..*(11)*

y_1 = Return on Assets (ROA) is dependent variable.

$y_{1it} = \beta_0 + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + \beta_5 D_{5it} + \mathcal{E}_{it}$ ……………………………………..*(12)*

$E(\mathcal{E}) = 0,$ D = {1 if the year is under post-recession periods (2009-14)

{0 if the year is under pre-recession periods (2003-08)

Here; β_0 is the unsystematic predictable constant component or the estimated constant, i=Selected Steel companies, t=is time lag, it covers total periods (2003-2014).

The multiple regression results are shown in *table 5.11 and 5.12* respectively using RNP and ROA as dependent variables.

TABLE 5.11: MULTIPLE REGRESSION RESULTS OF STEEL INDUSTRY (RNP AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients							Adj. R sqr.	F
	Raw Materials	Power & Fuel Cost	Employee cost	Other Mnf. Exp.	Selling& Adm. expenses	Interest	Dummy Variable		
Bhushan Steel	.484(.205)	.342(.787)	-1.146(.431)	.262(.687)	2.442(.057)	-1.817(.028)	-.033(.933)	.904	15.720(.009)
Jindal Saw	2.119(.033)	-3.305(.139)	3.791(.097)	-.277(.625)	-2.252(.072)	1.307(.067)	-.811(.362)	.755	5.854(.054)
Jindal Stain.	-.320(.871)	.813(.815)	.514 (.856)	.491(.753)	-.127(.951)	-2.306(.259)	.161(.868)	.480	2.453(.202)
Jindal Steel	-.609(.389)	-.463(.289)	2.041(.080)	2.428(.220)	.113(.771)	-2.987(.034)	.080(.815)	.915	17.911(.007)
JSW Steel	-6.224(.041)	3.588(.086)	2.979(.169)	3.067(.079)	1.153(.038)	-3.879(.033)	.642(.160)	.803	7.399(.036)
S A I L	-.610(.319)	3.700(.072)	.097(.772)	-.575(.282)	-2.667(.054)	-1.219(.028)	-.451(.272)	.798	7.200(.038)
Tata Steel	.529(.672)	-4.328(.077)	-.985(.571)	1.992(.307)	2.923(.237)	.940(.264)	-.204(.767)	.736	5.384(.062)
Usha Martin	.613(.653)	-2.321(.312)	3.074(.614)	.709(.880)	-.102(.924)	-2.853(.077)	.357(.568)	.596	3.321(.132)
Uttam Galva	1.727(.014)	2.273(.034)	1.067(.319)	-2.876(.010)	.540(.126)	-.622(.436)	-2.198(.013)	.898	14.785(.010)
Welspun Corp	1.113(.471)	.625(.454)	-2.758(.029)	-1.084(.265)	1.962(.066)	2.961(.153)	-2.299 (.086)	.683	4.383(.086)
Uttam Value Ste.	4.441(.026)	-1.403(.389)	-2.835(.179)	.435(.508)	1.605(.366)	-1.660(.027)	-1.046(.046)	.542	2.859(.163)
Mukand	-2.253(.141)	-1.796(.244)	2.560(.147)	1.553(.111)	.295(.437)	-1.163(.099)	.378(.587)	.461	2.344(.214)
Prakash Inds.	-.604(.757)	-.907(.210)	-.515(.831)	5.836(.068)	-5.229(.047)	-.050(.931)	1.038(.130)	.354	1.863(.286)
Surya Roshni	-.933 (.085)	-.026(.938)	1.240(.075)	.593(.004)	-.118(.835)	.333(.217)	-.007(.952)	.981	81.180(.000)
Sarda Energy	1.225(.359)	-.267(.336)	.234(.919)	-1.458 .550)	.041(.975)	1.273(.081)	-.499(.259)	.795	7.076(.039)
Mah. Seamless	1.029(.037)	-.187(.776)	-1.304(.027)	1.032(.014)	-.428(.143)	-.579(.016)	.917(.005)	.954	33.686(.002)
Monnet Ispat	.955(.439)	.095(.893)	1.122(.391)	.865(.122)	-1.100(.372)	-.234(.787)	.005(.992)	.769	6.221(.048)
Ratnamani Metals	1.424(.016)	.418(.319)	.226(.369)	-.405(.156)	-.187(.238)	-.213(.100)	-.517(.012)	.983	92.556(.000)
APL Apollo	-.946(.865)	1.554(.426)	.329(.877)	.528(.333)	.820(.190)	-.631(.915)	-.376(.749)	.774	6.394(.046)
PSL	-.024(.859)	-1.483(.002)	.435(.178)	-.278(.070)	.866(.000)	.039(.872)	-.041(.670)	.975	62.164(.001)
Godawari Power	4.117(.002)	.972(.160)	6.132(.001)	-.395(.400)	3.318(.003)	-11.450(.003)	-1.687(.001)	.977	66.911(.001)
Steel Industry	3.715(.091)	-3.800(.254)	-.323(.628)	4.690(.056)	-2.570(.099)	-.873(.378)	-.837(.100)	.820	8.153(.030)

Note: 'Significant' levels are shown in parenthesis.
Source: Complied and calculated by the researcher

In *table 5.11*, standardized coefficients are shown to identify the comparative influence of the significant variables on RNP. Results show that in a case of Steel Industry two cost components namely, Raw materials (3.715) and Other Mnf. expenses (4.690) are positively influence the RNP, but significantly only for Other Mnf. expenses. Selling and Adm. expenses (-2.570), Power and Fuel cost (-3.800), Employees cost (-0.323) and Interest (-0.873) are negatively influence the RNP,

but insignificant. The observed values of Adj. R^2 (0.829) and F-statistic are, thus, sufficient to speak in favour of the goodness of fit of the regression model for Steel Industry.

The beta value of Raw material cost was found to be highest for Jindal Saw (2.119) followed by Uttam Galva (1.727), Mah. Seamless (1.029), Ratnamani Metals (1.424) and Godawari Power (4.117). It indicates that Raw materials cost have a significant impact on the RNP of those companies. On the contrary, the negative and significant β value of Raw Materials in case of JSW Steel (-6.224) indicates the fact that it needs to give more emphasis to control the said cost. Other Mnf. expenses in case of Surya Roshni (0.593) and overall for Steel Industry (4.690) have positive and significant impact on dependent variable, RNP. While Uttam Galva (-2.876) needs urgent steps to control such expenditure. Similarly, Selling & Admin expenses have a positive impact on Steel Industry profitability of the following companies; Bhushan Steel (2.442), JSW Steel (1.153), Godawari Power (3.318) and PSL (.866). On the other hand, S A I L (-2.667) have a negative and significant impact of Selling & Admin expenses, need to control such expenditure. Interestingly, none of the companies have leveraged the benefit of Interest as the β value is negative. The Beta value of Dummy variables has a negative and significant impact on Uttam Value Ste.(-1.046), Ratnamani Metals (-.517) and Godawari Power (-1.687), but the beta value of Mah. Seamless (.917) has a positive impact on the recession.

In case of 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). Hence, the null hypothesis is accepted, i.e. cost components of the companies across the selected industries have no impact on firm performance. However, for other cost components, the beta coefficients are statistically insignificant. Thus, based on the results, the null hypothesis is rejected for the Steel Industry for those cost components.

Now, we look into the results of another regression model where ROA is the dependent variable. The results are shown in *table 5.12.*

TABLE 5.12: MULTIPLE REGRESSION RESULTS OF STEEL INDUSTRY (ROA AS DEPENDENT VARIABLE) FOR THE YEAR END 2003 TO 2014

Companies	Beta Standardized Coefficients							Adj. R sqr.	F
	Raw Materials Cost	Power & Fuel Cost	Employee cost	Other Mnf. Exp	Selling.&Adm. expenses	Interest	Dummy Variable		
Bhushan Steel	.841(.125)	-.359(.835)	-2.000(.324)	.414(.640)	1.652(.257)	-.954(.262)	-.507 (.374)	.822	8.264(.030)
Jindal Saw	2.235(.160)	-3.232 .345)	3.608(.713)	-1.078(.028)	-2.211(.030)	1.626(.083)	-1.481(.495)	.021	1.034(.518)
Jindal Stain.	-.605(.609)	-1.012(.625)	.467(.781)	1.704(.118)	.736(.556)	-2.080(.115)	-.148(.795)	.819	8.118(.030)
Jindal Steel	-.195(.912)	.087(.935)	-.621(.801)	.855(.856)	-.036(.972)	-.803(.762)	-.241(.789)	.408	2.084(.249)
JSW Steel	-5.433(.160)	2.565(.345)	-1.060(.713)	6.706(.028)	1.879(.030)	-4.220(.083)	.422(.495)	.550	2.922(.158)
S A I L	-.815(.387)	3.689(.197)	.028(.958)	-.906(.279)	-2.267(.216)	-1.269(.088)	-.837(.206)	.505	2.600(.186)
Tata Steel	1.273(.237)	-2.646(.141)	-2.566(.112)	-1.593(.301)	4.913(.041)	-.787(.240)	.716(.231)	.836	8.983(.025)
Usha Martin	.242(.799)	-1.153(.459)	-.032(.994)	2.430(.476)	.677(.391)	-2.283(.054)	-.507(.278)	.800	7.305(.037)
Uttam Galva	.417(.615)	.754(.600)	-1.415(.462)	.463(.708)	.878(.167)	-1.267(.396)	-.593(.570)	.648	3.889(.104)
Welspun Corp	1.531(.633)	.865(.618)	-2.101(.298)	-1.008(.601)	.659(.712)	.992(.795)	-1.320(.573)	.480	.528(.784)
Uttam Value Ste.	4.223(.038)	-.206(.901)	-3.386(.144)	.014(.984)	.779(.669)	-.518(.375)	-1.242(.034)	.474	2.415(.206)
Godawari Power	2.481(.585)	.235(.956)	3.624(.555)	-.472(.882)	2.062(.614)	-6.731(.611)	-1.640(.262)	.569	0.755(.651)
PSL	.235(.399)	-1.190(.041)	.444(.454)	-.262 (.313)	.579(.018)	-.116(.810)	-.380(.103)	.899	14.956(.010)
APL Apollo	-3.966(.713)	4.595(.246)	-2.301(.582)	1.062(.315)	1.688(.168)	1.832(.872)	-2.449(.312)	.161	1.3(.422)
Ratnamani Metals	2.070(.327)	1.953(.366)	-1.290(.332)	-.621(.636)	-.568(.464)	-.185(.741)	-1.472(.074)	.539	2.84(.165)
Monnet Ispat	2.562(.160)	-.496(.606)	-2.016(.267)	1.249(.103)	-2.222 (.205)	2.172(.116)	-.137(.839)	.584	3.208(.138)
Mah. Seamless	-.145(.799)	1.178(.296)	-1.853(.039)	.131(.757)	.382(.370)	-.329(.232)	-.186(.524)	.882	12.730(.014)
Sarda Energy	.268(.913)	-.053(.916)	1.665(.712)	-3.560(.459)	1.477(.571)	.813(.488)	-1.113(.206)	.225	1.456(.376)
Surya Roshni	-2.317(.265)	1.509(.338)	2.791(.287)	1.021(.086)	-2.410(.358)	-.099(.925)	.295(.565)	.631	3.688(.122)
Prakash Inds.	-.917(.386)	.909(.044)	-.190(.879)	-.525(.688)	.338(.741)	.265(.393)	.263(.404)	.828	8.541(.028)
Mukand	-2.041(.211)	-.519(.742)	.949(.583)	1.867(.093)	.168(.683)	-.738(.291)	.156(.838)	.329	1.772(.303)
Steel Industry	1.939(.619)	-2.129(.746)	-.966(.507)	2.627(.527)	-.720(.795)	-.569(.779)	-.862(.365)	.164	1.309(.419)

Note: 'Significant' levels are shown in parenthesis.

Source: Complied and calculated by the researcher

In *table 5.12,* standardized coefficients are shown to identify the comparative influence of the significant variables on ROA. Results show that in case of Steel Industry, the observed values of Adj. R^2 (0.164) are not fit with the regression model. The observed Adj. R^2 in Bhushan Steel (0.822), Jindal Stain. (0.819) and Tata Steel (0.836), F-statistic is, thus, sufficient to speak in favour of the goodness

of fit of the regression model of sample companies. In other words, the independent variables are perfectly explaining the variations in the Return on Assets of the firms.

The β value of Raw Materials cost was found to be highest (2.235) in the case of Jindal Saw followed by Welspun Corp (1.531), Tata Steel (1.273) and Bhushan Steel (0.841), but insignificant. Other Mnf.Exp in case of Jindal Saw (β=-1.078), Welspun Corp (β= -1.008) and SAIL (β=-0.906), have negative impact on the dependent variable, ROA. It needs urgent steps to control such expenditure. While, JSW Steel (β= 6.706), Usha Martin (β=2.430), Jindal Stain. (β=1.704) and Jindal Steel (=0.855) have positive impact on dependent variable but insignificant. Similarly, Power and Fuel Cost have a negative impact on ROA in most of PSL (β=-1.190). Employee cost also has a negative and significant impact on Mah. Seamless (-1.853). We have seen the highest beta value of Selling and adm. expenses for Tata Steel (4.913) and PSL (.579) have positive and significant impact. Similarly, the beta value of Usha Martin, i.e. -2.283 on Interest expenses has negative and significant impact.

Thus, based on the contradictory results of company wise, the study has used the overall results of the industry during the study period as the basis for testing the null hypothesis. Overall results for the Steel 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, i.e. cost components of the companies across the selected industries have no impact on firm performance.

5.6 Summary: In this chapter, we have analyzed and got the impact of cost components on RNP and ROA on respective Industry and companies'. Moreover, we have seen that the beta coefficient of significant cost components vary from company wise and also industry wise. Finally, impact analysis of cost components gives us an idea about the significant cost to control on the respective companies and industries. In the next, we have examined the cost efficiency of the companies and have identified the cost efficient companies during pre and post recession periods.