CHAPTER 5

FINDINGS, SUGGESTIONS AND CONCLUSION
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5.1 Overview
The evaluation of financial performance of the nationalised banks is significant in the aftermaths of the global recession and high inflation that was inflicted upon India. The findings of the study, suggestions put forth to strengthen the financial performance of the nationalised banks in India, implications to the policy makers and the conclusion drawn are presented in this chapter.

5.2 Findings of the Study
The findings concerning the evaluation of the financial performance of the nationalised banks in India are stated.

5.2.1 Growth of the Nationalised Banks
The findings related to the growth of the nationalised banks during the period of the study 2001 – 2010 are -

1. Corporation Bank had the highest compounded annual growth rate of 5.14% and Dena Bank had the least for the Number of Offices with 0.24%.
2. Oriental Bank of Commerce had the highest compounded annual growth rate of 17.6% and Central Bank of India had the least with a negative growth rate of 2.07% for the Number of Employees.
3. UCO Bank had the highest compounded annual growth rate of 24.97% and Dena Bank had the least with 14.86% for the Business per Employee.
4. Indian Bank had the highest compounded annual growth rate of 48.68% and Corporation Bank had the least with 14.08% for the Profit per Employee.
5. Indian Overseas Bank had the highest compounded annual growth rate of 23.21% and UCO Bank and United Bank of India had the least with 7.09% for the Capital and Reserves and Surplus.
6. UCO Bank had the highest compounded annual growth rate of 18.98% and Oriental Bank of Commerce had the least with 11.27% for the Deposits.
7. Oriental Bank of Commerce had the highest compounded annual growth rate of 22.38% and Andhra Bank had the least with 7.76% for the Investments.

8. UCO Bank had the highest compounded annual growth rate of 23.39% and Oriental Bank of Commerce had the least with 14.03% for the Advances.

9. Oriental Bank of Commerce had the highest compounded annual growth rate of 16.17% and Dena Bank had the least with 8.86% for the Interest Income.

10. Union Bank of India had the highest compounded annual growth rate of 20.27% for the Other Income and Punjab and Sind Bank had the least with 9.45%.

11. UCO Bank had the highest compounded annual growth rate of 16.15% and Dena Bank had the least with 8.66% for the Interest Expended.

12. Corporation Bank had the highest compounded annual growth rate of 13.96% and Oriental Bank of Commerce had the least with 2.74% for the Operating Expenses.

13. Bank of Baroda had the highest decline in the Cost of Funds with the negative compounded annual growth rate of 4.39% and Oriental Bank of Commerce the highest increase with a positive compounded annual growth rate of 0.44% for the Cost of Funds.

14. UCO Bank had the highest compounded annual growth rate of 1.93% and Syndicate Bank had the least with a negative compounded growth rate of 4.74% for the Return on Advances adjusted to the Cost of Funds.

15. Syndicate Bank had the highest decline with a negative compounded annual growth rate in Wages as a percent to Total Expenses with 7.65% and Oriental Bank of Commerce had a steep increase with a positive growth rate of 1.30%.

16. Dena Bank had the highest compounded annual growth rate of 32.62% and Syndicate Bank had the least with 3.76% for the Return on Assets.

17. UCO Bank had the highest compounded annual growth rate of 3.85% and Oriental Bank of Commerce had the least with 0.299% for the Capital Adequacy Ratio.

18. Indian Bank had the highest decline in the Net Non Performing Assets with a negative compounded annual growth rate of 31.46% and Indian Overseas Bank had the least decline with the negative rate of 9.72%.
5.2.2 Evaluation on the basis of Capital Adequacy, Asset Quality, Management, Earnings and Liquidity

The findings concerning the evaluation of the nationalised banks on the parameter of Capital Adequacy during the period of study 2001 – 2010 are stated below –

1. Corporation Bank is in the top position with the highest average of Capital Adequacy Ratio of 15.38% and Dena Bank in the last position with the least average of 10.416%.

2. Corporation Bank in the top position with the highest average of Capital Adequacy Ratio Tier I with 12.867% and UCO Bank in the last position with the least average of 5.772%.

3. All the Nationalised Banks in India have maintained their Capital Adequacy Ratios above the stipulated minimum of 9%.

4. Corporation Bank has secured the first rank and Dena Bank the last rank in the Capital Adequacy Group.

The findings relevant to the evaluation of the nationalised banks on the parameter of Asset Quality during the period of study 2001 – 2010 are mentioned below –

1. Allahabad Bank is in the first position with the highest average of 39.92% and Bank of Baroda is in the last position with the least average of 26.8% for the ratio of Priority Sector Advances to Total Advances.

2. Indian Overseas Banks is in the first position with the highest average of 90.64% and Syndicate Bank in the last position with the least average of 72.77% for the ratio of Secured Advances to Total Advances.

3. Andhra Bank is in the first position with the least average of 0.93% and UCO Bank is in the last position with the highest average of 10.44% for the ratio of Net Non Performing Assets to Net Advances.

4. Punjab National Bank has attained the first position and UCO Bank in the last position in the Asset Quality Group.
The findings referring to the evaluation of the nationalised banks on the parameter of Management during the period of study 2001 – 2010 are given below –

- Oriental Bank of Commerce is in the first position with an average of Rs. 656.61 lakh and Central Bank of India in the last position with an average of Rs. 303.27 lakh for the ratio of Business per Employee.
- Corporation Bank is in the first position with an average of Rs. 5.11 lakh and Central Bank of India in the last position with an average or Rs. 1.24 lakh for the ratio of Profit per Employee.
- Andhra Bank is in the top position with the highest average of 10.37% and Bank of Baroda in the last position with the least average of 8.68% for the Return on Advances.
- Andhra Bank in the best position with the highest average of 25.2% and Punjab and Sind Bank in the last position with the least average of 8.89% for the Return on Equity.
- Andhra Bank has secured the first position and Central Bank of India is in the last position in the rankings of the Management Group.

The findings related to the evaluation of the nationalised banks on the parameter of Earnings during the period of study 2001 – 2010 are cited below –

1. Oriental Bank of Commerce has secured first rank with the highest average of 8.75% and Bank of Baroda the last rank with the least average of 7.67% for the ratio of Interest Income to Total Assets.
2. Punjab National Bank has got the first rank with the highest average of 3.44% and UCO Bank the last rank with the least average of 2.41% for the ratio of Net Interest Margin to Total Assets.
3. Dena Bank is in the Number One position with the highest average of 1.65% and Central Bank of India in the last position with the least average of 1.01% for the ratio of Non-Interest Income to Total Assets.
4. Oriental Bank of Commerce is in the first position with the least average of 1.62% and Punjab and Sind Bank is in the last position with the highest average of 2.75% for the ratio of Intermediation Cost to Total Assets.
5. Corporation Bank is in the first position with the least average of 0.2% and Punjab and Sind Bank in the last position with the highest average of 1.41% for the ratio of Burden to Total Assets.

6. Corporation Bank is in the first position with the highest average of 2.74% and UCO Bank in the last position with the least average of 1.48% for the ratio of Operating Profits to Total Assets.

7. Corporation Bank is in the first position with the highest average of 1.46% and Punjab and Sind Bank in the last position with the least average of 0.53% for the ratio of Return on Assets.

8. Oriental Bank of Commerce is in the first position and Central Bank of India in the last position in the rankings of the Earnings group.

The findings regarding the evaluation of the nationalised banks on the parameter of Liquidity during the period of study 2001 – 2010 are stated below –

1. Punjab National Bank has attained the first rank with the highest average of 9.61% and Bank of Baroda has the last rank with the least average of 5.1% for the Cash Deposit Ratio.

2. Bank of India is in the number one position with the highest average of 69.21% and United Bank of India in the last position with the least average of 47.97%.

3. Punjab National Bank tops the liquidity group and United Bank of India is in the last position of the liquidity group.

The findings about the overall rankings of the nationalised banks on the basis of the parameters of the Capital Adequacy, Asset Quality, Management, Earnings and Liquidity during the period of study 2001 – 2010 are narrated below –

1. Andhra Bank is ranked First showing its superiority in Management, Earnings and Liquidity parameters

2. Oriental Bank of Commerce is ranked Second with its superiority in Earnings, Asset Quality and Management parameters.

3. UCO Bank has secured the Last rank and is lagging in the areas of Asset Quality, Capital Adequacy and Earnings.

4. Central Bank of India is the second bank that has not performed well in the areas of Management and Earnings.
5.2.3 Evaluation on the basis Efficiency, Effectiveness and Performance

The findings concerning the evaluation of the nationalised banks on the parameter of Efficiency during the period of study 2001 – 2010 are stated below –


10. Allahabad Bank, Andhra Bank, Bank of Baroda, Canara Bank, Corporation Bank, Indian Bank, Oriental Bank of Commerce, Punjab and Sind Bank,
Punjab National Bank, Syndicate Bank, UCO Bank and United Bank of India are the efficient nationalised banks for the year 2010.

11. Oriental Bank of Commerce was the only efficient nationalised bank in India for all the ten years during the period 2001 – 2010.

12. Central Bank of India has been the exclusive bank that never was efficient during the study period 2001 – 2010.

The findings concerning the evaluation of the nationalised banks on the parameter of Effectiveness during the period of study 2001 – 2010 are mentioned below –


2. Bank of India, Canara Bank, Syndicate Bank and United Bank of India are the effective nationalised banks for the year 2002.

3. Andhra Bank, Bank of India, Punjab National Bank, United Bank of India and Vijaya Bank are the effective nationalised banks for the year 2003


5. Andhra Bank, Corporation Bank, Indian Overseas Bank, Punjab and Sind Bank and United Bank of India are the effective nationalised banks for the year 2005.


7. Bank of India, Dena Bank, Indian Bank, Punjab and Sind Bank and Vijaya Bank are the effective nationalised banks for the year 2007.


9. Bank of India, Corporation Bank and Indian Bank are the effective nationalised banks for the year 2009.

10. Allahabad Bank, Andhra Bank, Indian Bank and Punjab National Bank are the effective nationalised banks for the year 2010.
11. There were no nationalised banks in India with an effectiveness score of 1.00 for all the ten years during the period 2001 – 2010.

12. Oriental Bank of Commerce and UCO Bank have never been effective during any of the years in the period 2001 – 10.

13. Bank of India, Corporation Bank and United Bank of India are the only three nationalised banks that have been effective for a maximum of six times during the period 2001 – 2010.

The findings regarding the evaluation of the nationalised banks on the parameter of Performance during the period of study 2001 – 2010 are stated below –

1. Bank of India, Corporation Bank and Union Bank of India are the top performers for the year 2001.

2. Bank of India and United Bank of India are the top performers for the year 2002.

3. Bank of India and United Bank of India are the top performers for the year 2003.

4. Bank of India, Corporation Bank, Dena Bank and United Bank of India are the top performers for the year 2004.

5. Andhra Bank, Corporation Bank, Punjab and Sind Bank and United Bank of India are the top performers for the year 2005.

6. Corporation Bank and United Bank of India are the top performers for the year 2006.

7. Indian Bank is the top performer for the year 2007.


9. Corporation Bank is the top performer for the year 2009.

10. Allahabad Bank, Andhra Bank, Indian Bank and Punjab National Bank are the top performers for the year 2010.

11. There were no nationalised banks in India with a performance score of 1.0 during any of the years for the period 2001 – 2010.

12. Corporation Bank and United Bank of India have been the top performers for a maximum of six times during the ten year period 2001 – 2010.

have never achieved the performance score of 1.0 during the entire study period 2001 – 2010.

The important observations are –

- Majority of the efficient banks are not effective and most of the effective banks are not efficient during the period 2001 – 2010.
- 95% of the nationalised banks in India should diminish their inputs of physical capital, labour and loanable funds by 1% to 6% to be 100% efficient with the same level of outputs during the period of the study 2001 – 2010.
- The performance of the nationalised banks in India is strongly related to effectiveness during the period 2001 – 2010.
- All the nationalised banks have to increase their Non Interest Income and Net Interest Income or reduce their Advances and Investments by 4% to 26% to improve their effectiveness scores.
- All the nationalised banks in India are in the quadrant of super stars of the Efficiency-Effectiveness Matrix that depicts an efficiency and effectiveness score of more than 50% during the period 2001 – 2010.

5.2.4 Evaluation of Integrated Financial Performance

The findings regarding the evaluation of the Integrated Financial Performance of the nationalised banks during the period of study 2001 – 2010 are stated below –

1. Corporation Bank is the nationalised bank in India that tops the list of the Intergrated Financial Performance with the index value of 1.19 for the ten year period of 2001 – 2010.
3. Central Bank of India is the nationalised bank in India in the last position of Integrated Financial Performance with the least value of 0.87 of Integrated Financial Performance Index for the ten year period 2001 – 2010.
4. The other bank that has a low Integrated Financial Performance Index is United Bank of India with an index value of 0.9.
5.2.5 Classification of the Nationalised Banks on the basis of Camel Analysis

The classification of the nationalised banks on the basis of the Camel analysis for the period 2001 – 2010 is stated below –

2. Vijaya Bank, Union Bank of India, Allahabad Bank and Syndicate Bank are the Good Nationalised Banks.
3. Bank of Baroda, Indian Bank and Bank of India are the Fair Nationalised Banks.
4. Dena Bank, Punjab and Sind Bank, United Bank of India, Bank of Maharashtra, Central Bank of India and UCO Bank are the Poor Nationalised Banks.

The significant points to be noted are –

- The Discriminant Analysis and Logistic Regression Analysis confirm that the classification of the nationalised banks on the basis of the CAMEL Analysis is accurately classified to the extent of 73%. The results of the Discriminant Analysis and the Logistic Regression Analysis are consistent with each other.
- Neural Network Model has proven the classification is accurate for 68% of the sample held for training, 59% of the sample held for testing and 61% of the sample for the purpose of holdout.

5.2.6 Classification of Nationalised Banks of the basis of Efficiency, Effectiveness and Performance

The classification of the nationalised banks on the basis of Efficiency for the period 2001 – 2010 is given below –

2. Bank of India, Bank of Maharashtra, Indian Bank, Punjab National Bank and Union Bank of India are the Next to Highest Efficient Banks.
3. Allahabad Bank, Bank of Baroda, Dena Bank, Indian Overseas Bank and Vijaya Bank are the Next to Lowest Efficient Banks.
4. Canara Banks, Central Bank of India, Punjab and Sind Bank, Syndicate Bank and UCO Bank are the Lowest Efficient Banks.

The classification of the nationalised banks on the basis of Effectiveness for the period 2001 – 2010 is provided below –

1. Bank of India, Corporation Bank, Indian Bank and Punjab National Bank are the Highest Effective Banks.
2. Andhra Bank, Bank of Baroda, Dena Bank, Punjab and Sind Bank and Vijaya Bank are the Next to Highest Effective Banks.
3. Allahabad Bank, Canara Bank, Indian Overseas Bank, Union Bank of India and United Bank of India are the Next to Lowest Effective Banks

The Classification of the Nationalised Banks on the basis of Performance for the period 2001 – 2010 is stated below –

1. Corporation Bank, Indian Bank and Punjab National Bank are the Highest Performing Banks.
2. Andhra Bank, Bank of Baroda, Bank of India, Dena Bank, Punjab and Sind Bank and Vijaya Bank are the Next to Highest Performing Banks.
3. Allahabad Bank, Canara Bank, Indian Overseas Bank, Union Bank of India and United Bank of India are the Next to Lowest Performing Banks

The considerable point is –

- The Kruskal-Wallis Test has proven that the Classification of Nationalised Banks on the basis of Efficiency, Effectiveness and Performance based on Data Envelopment Analysis is significant at 5% level.
5.2.7 Classification of Nationalised Banks on the basis of Integrated Financial Performance

The classification of the nationalised Banks on the basis of Integrated Financial Performance for the period 2001 – 2010 is stated below –

1. Andhra Bank, Bank of Baroda, Bank of India, Corporation Bank and Oriental Bank of Commerce are the Excellent Nationalised Banks.
2. Canara Bank, Dena Bank, Punjab National Bank and Union Bank of India are the Good Nationalised Banks.
3. Allahabad Bank, Indian Overseas Bank, Punjab and Sind Bank, Syndicate Bank, Vijaya Bank and Indian Bank are the Fair Nationalised Banks.
4. Bank of Maharasthra, Central Bank of India, United Bank of India and UCO Bank are the Poor Nationalised Banks.

The noteworthy aspects are –

- The Discriminant Analysis has confirmed that the nationalised banks have been accurately classified on the basis of Integrated Financial Performance to the extent of 65.3%.
- The Neural Network Model has proven that the classification of the nationalised banks on the basis of the Integrated Financial Performance is accurate for 61% of the sample held for training, 54% of the sample held for testing and 67% of the sample for the purpose of holdout.

5.2.8 Distinction between the Categories of the Nationalised Banks classified on the basis of the Camel Analysis

The significant differentiating characteristics between the Excellent Group and the Good Group of Nationalised Banks as verified by the Multivariate Analysis of Variance at 5% level of significant are –

1. The Excellent Group have the highest Capital Adequacy Ratio Tier I, the ratio of the Capital Adequacy parameter than the Good Group and there is a positive and significant difference between the groups on the basis of the Capital Adequacy Ratio Tier I.
2. The Excellent Group have the least Net Non Performing Assets to Net Advances, the ratio of the Asset Quality parameter than the Good Group and
there is a negative and significant difference between the groups on the basis of the Net Non Performing Assets to Net Advances.

3. The Excellent Group have the highest Return on Assets, the sole ratio of the Earnings parameter than the Good Group and there is a positive and significant difference between the groups on the basis of the Return on Assets.

4. The Excellent Group has the highest Cash Deposit Ratio; the ratio of the Liquidity parameter than the Good Group and there is a significant and positive difference between groups on the basis of the Cash Deposit Ratio.

The significant differentiating characteristics between the Excellent Group and the Fair Group of Nationalised Banks as proven by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Excellent Group has the highest Capital Adequacy Ratio and the Capital Adequacy Ratio Tier I, the ratios of the Capital Adequacy parameter than the Fair Group and there is a positive and significant difference between the Groups on the basis of the Capital Adequacy Ratio and Capital Adequacy Ratio Tier I.

2. The Excellent Group has the highest Priority Sector Advances to Total Advances and Secured Advances to Total Advances, the ratios of the Asset Quality parameter than the Fair Group and there is a positive and significant difference between the Groups on the basis of the Priority Sector Advances to Total Advances and Secured Advances to Total Advances.

3. The Excellent Group has the highest Profit per Employee, the ratio of the Management parameter than the Fair Group and there is a positive and significant difference between the Groups on the basis of the Profit per Employee.

4. The Excellent Group has the highest Operating Profits to Total Assets, the ratio of the Earnings parameter than the Fair Group and there is a significant and positive difference between the Groups on the basis of the Operating Profits to Total Assets.
The significant differentiating characteristics between the Excellent Group and the Poor Group of Nationalised Banks as confirmed by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Excellent Group has the highest Capital Adequacy Ratio and the Capital Adequacy Ratio Tier I, the ratios of the Capital Adequacy parameter than the Poor Group and there is a positive and significant difference between the Groups on the basis of the Capital Adequacy Ratio and Capital Adequacy Ratio Tier I.

2. The Excellent Group have the least Net Non Performing Assets to Net Advances, the ratio of the Asset Quality parameter than the Poor Group and there is a negative and significant difference between the groups on the basis of the Net Non Performing Assets to Net Advances.

3. The Excellent Group has the highest Profit per Employee and the Return on Equity, the ratios of the Management parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Profit per Employee and the Return on Equity.

4. The Excellent Group has the highest Net Interest Income to Total Assets, Operating Profits to Total Assets and Return on Assets, the ratios of the Earnings parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Net Interest Income to Total Assets, Operating Profits to Total Assets and Return on Assets.

5. The Excellent Group has the lowest Intermediation Cost to Total Assets and Burden to Total Assets, the ratios of the Earnings parameter than the Poor Group and there is a significant and negative difference between the groups on the basis of the Intermediation Cost to Total Assets and Burden to Total Assets.

6. The Excellent Group has the highest Credit Deposit Ratio; the ratio of the Liquidity parameter than the Poor Group and there is a significant and positive difference between groups on the basis of the Credit Deposit Ratio.

There no significant differentiating characteristics between the Good Group and the Fair Group of Nationalised Banks as confirmed by the Multivariate Analysis of Variance at 5% level of significance.
The significant differentiating characteristics between the Good Group and the Poor Group of Nationalised Banks as confirmed by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Good Group has the highest Profit per Employee and the Return on Advances, the ratios of the Management parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Profit per Employee and the Return on Advances.

2. The Good Group has the highest Operating Profits to Total Assets and Return on Assets, the ratios of the Earnings parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Operating Profits to Total Assets and Return on Assets.

3. No ratios of the Capital Adequacy Group, Asset Quality and Liquidity parameters differentiate the Good and the Poor Group of Nationalised Banks.

The significant differentiating characteristics between the Fair Group and the Poor Group of Nationalised Banks as confirmed by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Fair Group has the lowest Secured Advances to Total Advances, the ratio of the Asset Quality parameter than the Poor Group and there is a significant and negative difference between the groups on the basis of the Secured Advances to Total Advances.

2. The Fair Group has the highest Return on Equity, the ratio of the Management parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Return on Equity.

3. The Fair Group has the highest Return on Assets, the ratio of the Earnings parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Return on Assets.

4. The Fair Group has the highest Credit Deposit Ratio, the ratio of the Liquidity parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Credit Deposit Ratio.
5.2.9 Distinction of the Nationalised Banks classified on the basis of the Efficiency, Effectiveness and Performance based on Data Envelopment Analysis

The points of distinction are –

1. The Nationalised Banks have a higher average of efficiency in all the four categories of Highest, Next to Highest, Next to Lowest and Lowest than the Effectiveness and Performance Categories.
2. All the Nationalised Banks in the four categories of Highest, Next to Highest, Next to Lowest and Lowest are practicing Efficiency and not Effectiveness.

5.2.10 Distinction between the Groups of the Nationalised Banks classified on the basis of the Integrated Financial Performance

The significant differentiating characteristics between the Excellent Group and the Good Group of Nationalised Banks as verified by the Multivariate Analysis of Variance at 5% level of significant are –

1. The Excellent Group have the highest Capital Adequacy, Capital Adequacy Ratio Tier I, the ratios of the Capital Adequacy parameter than the Good Group and there is a positive and significant difference between the groups on the basis of the Capital Adequacy Ratio Tier I.
2. The Excellent Group have a low Primary Sector Advances to Total Advances, the ratio of the Asset Quality parameter than the Good Group and there is a negative and significant difference between the groups on the basis of the Net Non Performing Assets to Net Advances.
3. The Excellent Group has the highest Profit per Employee, the sole ratio of the Earnings parameter than the Good Group and there is a positive and significant difference between the groups on the basis of the Return on Assets.
4. The Excellent Group has the least Burden to Total Assets, the ratio of the Earnings parameter than the Good Group and there is a negative and significant difference between the groups on the basis of the Burden to Total Assets.
5. The Excellent Group has the highest Return on Assets, the ratio of the Earnings parameter than the Good Group and there is a positive and significant difference between the groups on the basis of the Return on Assets.
6. The Excellent Group has the highest Cash Deposit Ratio; the ratio of the Liquidity parameter than the Good Group and there is a significant and positive difference between groups on the basis of the Cash Deposit Ratio.

7. The Excellent Group has the highest Efficiency than the Good Group and there is a significant and positive difference between the groups on the basis of the Efficiency.

The significant differentiating characteristics between the Excellent Group and the Fair Group of Nationalised Banks as proven by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Excellent Group has the highest Capital Adequacy Ratio and the Capital Adequacy Ratio Tier I, the ratios of the Capital Adequacy parameter than the Fair Group and there is a positive and significant difference between the Groups on the basis of the Capital Adequacy Ratio and Capital Adequacy Ratio Tier I.

2. The Excellent Group has the highest Priority Sector Advances to Total Advances, the ratio of the Asset Quality parameter than the Fair Group and there is a positive and significant difference between the Groups on the basis of the Priority Sector Advances to Total Advances.

3. The Excellent Group has the highest Business per Employee, Profit per Employee and Return on Advances, the ratios of the Management parameter than the Fair Group and there is a positive and significant difference between the Groups on the basis of the Business per Employee, Profit per Employee and Return on Advances.

4. The Excellent Group has the least Intermediation Cost to Total Assets and Burden to Total Assets, the ratios of the Earnings parameter than the Fair Group and there is a negative and significant difference between the groups on the basis of the Intermediation Cost to Total Assets and Burden to Total Assets.

5. The Excellent Group has the highest Operating Profits to Total Assets and Return on Assets, the ratios of the Earnings parameter than the Fair Group and there is a significant and positive difference between the Groups on the basis of the Operating Profits to Total Assets.
6. The Excellent Group has the least Credit Deposit Ratio, the ratio of the Liquidity parameter than the Fair Group and there is a significant and positive difference between the Groups on the basis of the Credit Deposit Ratio.

7. The Excellent Group has the highest Efficiency than the Fair Group and there is a significant and positive difference between the groups on the basis of the Efficiency.

The significant differentiating characteristics between the Excellent Group and the Poor Group of Nationalised Banks as confirmed by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Excellent Group has the highest Capital Adequacy Ratio and the Capital Adequacy Ratio Tier I, the ratios of the Capital Adequacy parameter than the Poor Group and there is a positive and significant difference between the Groups on the basis of the Capital Adequacy Ratio and Capital Adequacy Ratio Tier I.

2. The Excellent Group has the least Primary Sector Advances to Total Advances, the ratio of the Asset Quality parameter than the Poor Group and there is a negative and significant difference between the groups on the basis of the Primary Sector Advances to Total Advances.

3. The Excellent Group has the highest Business per Employee, Profit per Employee and the Return on Equity, the ratios of the Management parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Profit per Employee and the Return on Equity.

4. The Excellent Group has the highest Net Interest Income to Total Assets, Operating Profits to Total Assets and Return on Assets, the ratios of the Earnings parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Net Interest Income to Total Assets, Operating Profits to Total Assets and Return on Assets.

5. The Excellent Group has the lowest Intermediation Cost to Total Assets and Burden to Total Assets, the ratios of the Earnings parameter than the Poor Group as there is a significant and negative difference between the groups on the basis of the Intermediation Cost to Total Assets and Burden to Total Assets.
6. The Excellent Group has the highest Credit Deposit Ratio; the ratio of the Liquidity parameter than the Poor Group as there is a significant and positive difference between groups on the basis of the Credit Deposit Ratio.

7. The Excellent Group has the highest Efficiency, Effectiveness and Performance than the Poor Group and there is a significant and positive difference between the groups on the basis of the Efficiency, Effectiveness and Performance.

The significant differentiating characteristics between the Good Group and the Fair Group of Nationalised Banks as confirmed by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Good Group has the least Return on Advances, the ratio of Management parameter than the Fair Group and there is a significant difference between the groups on the basis of the Return on Advances.

2. The Good Group has the least Intermediation Cost to Total Assets and Burden to Total Assets, the ratios of the Earnings parameter than the Fair Group and there is a significant difference between the groups on the basis of Intermediation Cost to Total Assets and Burden to Total Assets.

3. The Good Group has the highest Operating Profits to Total Assets, the ratio of the Earnings parameter than the Fair Group and there is a significant difference between the groups on the basis of the Operating Profits to Total Assets.

The significant differentiating characteristics between the Good Group and the Poor Group of Nationalised Banks as confirmed by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Good Group has the highest Net Interest Income to Total Assets, Operating Profits to Total Assets and Return on Assets, the ratios of the Earnings parameter than the Poor Group as there is a significant and positive difference between the groups on the basis of the Operating Profits to Total Assets and Return on Assets.

2. The Good Group has the least Burden to Total Assets, the ratio of the Earnings parameter than the Poor Group and there is a significant difference between the groups on the basis of Burden to Total Assets.
3. The Good Group has the highest Credit Deposit Ratio; the ratio of the Liquidity parameter than the Poor Group and there is a significant and positive difference between groups on the basis of the Credit Deposit Ratio.

4. The Good Group has the highest Effectiveness and Performance than the Poor Group and there is a significant and positive difference between groups on the basis of the Effectiveness and Performance.

5. No ratios of the Capital Adequacy Group, Asset Quality and Management parameters differentiate the Good from the Poor Group of Nationalised Banks.

The significant differentiating characteristics between the Fair Group and the Poor Group of Nationalised Banks as confirmed by the Multivariate Analysis of Variance at 5% level of significance are –

1. The Fair Group has the highest Primary Sector Advances to Total Advances and Secured Advances to Total Advances, the ratios of the Asset Quality parameter than the Poor Group and there is a significant and negative difference between the groups on the basis of the Secured Advances to Total Advances.

2. The Fair Group has the highest Profit per Employee, Return on Equity and Return on Advances, the ratios of the Management parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Return on Equity.

3. The Fair Group has the highest Net Interest Income to Total Assets, Operating Profits to Total Assets and Return on Assets, the ratios of the Earnings parameter than the Poor Group and there is a significant and positive difference between the groups on the basis of the Return on Assets.

4. The Fair Group has the highest Effectiveness and Performance than the Poor Group and there is a significant and positive difference between groups on the basis of the Effectiveness and Performance.

5.2.11 Factors that affect the Classification of Nationalised Banks on the basis of the Camel Analysis

The Factors that differentiate the Excellent Nationalised Banks from the other groups – Good, Fair and Poor Nationalised Banks classified on the basis of Camel Analysis as revealed by the results of Discriminant Analysis are –
1. Return on Assets with a positive and significant relationship.
2. Operating Profits to Total Assets with a positive and significant relationship.
3. Profit per Employee with a positive and significant relationship.
4. Return on Equity with a positive and significant relationship.
5. Capital Adequacy Ratio Tier 1 with a positive and significant relationship.
6. Burden to Total Assets with a negative and significant relationship.
8. Intermediation Cost to Total Assets with a negative and significant relationship.
9. Net Interest Income to Total Assets with a positive and significant relationship.
10. Business per Employee with a positive and significant relationship.
11. Non Interest Income to Total Assets with a positive and significant relationship.

The Factors differentiate the Good Nationalised Banks from the other groups – Fair and Poor Nationalised Banks classified on the basis of Camel Analysis as revealed by the results of Discriminant Analysis are -

1. Primary Sector Advances to Total Advances with a negative and significant relationship.
2. Secured Advances to Total Advances with a negative and significant relationship.
3. Credit Deposit Ratio with a positive and significant relationship.
4. Interest Income to Total Assets with a negative and significant relationship.
5. Return on Advances with a negative and significant relationship.

Primary Sector Advances to Total Advances, Secured Advances to Total Advances, Interest Income to Total Assets and the Return on Advances have a negative relationship as the average values of these ratios for the Poor Group is higher than the Good Group.

The Factor that differentiates the Fair Nationalised Banks from the Poor Nationalised Banks classified on the basis of Camel Analysis as revealed by the Results of
Discriminant Analysis is the Credit Deposit Ratio with a negative and insignificant relationship.

5.2.12 Factors that affect the Classification of Nationalised Banks on the basis of the Integrated Financial Performance

The Factors that differentiate the Excellent Nationalised Banks from the other groups – Good, Fair and Poor Nationalised Banks classified on the basis of Integrated Financial Performance as revealed by the results of Discriminant Analysis are –

1. Burden to Total Assets with a negative and significant relationship.
2. Operating Profits to Total Assets with a positive and significant relationship.
3. Profit per Employee with a positive and significant relationship.
4. Return on Assets with a positive and significant relationship.
5. Credit Deposit Ratio with a positive and significant relationship.
6. Efficiency with a positive and significant relationship.
7. Intermediation Cost to Total Assets with a negative and significant relationship.
8. Business per Employee with a positive and significant relationship.
9. Capital Adequacy Ratio with a positive and significant relationship.
10. Non Interest Income to Total Assets with a positive and significant relationship.
11. Return on Equity with a positive and significant relationship.

The Factors that differentiate the Good Nationalised Banks from the other groups – Fair and Poor Nationalised Banks classified on the basis of Integrated Financial Performance as revealed by the results of Discriminant Analysis are –

1. Performance with a positive and significant relationship.
2. Effectiveness with a positive and significant relationship.
3. Primary Sector Advances to Total Advances with a positive and significant relationship.
4. Net Interest Income to Total Assets with a positive and significant relationship.
5. Return on Advances with a positive and significant relationship.
6. Interest Income to Total Assets with a positive and significant relationship.

The Factors that differentiate the Fair Nationalised Banks from the Poor Nationalised
Banks classified on the basis of Integrated Financial Performance as revealed by the
results of Discriminant Analysis are –

1. Capital Adequacy Ratio Tier I with a positive and significant relationship.
2. Cash Deposit Ratio with a negative and significant relationship.
3. Secured Advances to Total Advances with a negative and significant relationship.

Cash Deposit Ratio has a negative relationship as the average value of this ratio for
the Poor Group is higher than the Fair Group.

5.2.13 Bank-specific Factors that influence the financial performance of the
Nationalised Banks based on Camel Analysis

Cluster Analysis, Discriminant Analysis and Logistic Regression Analysis have stated
3 significant factors that are consistent in the results of all the three tests as the
significant Bank-specific factors of financial performance. They are –

1. Capital Adequacy Ratio
2. Secured Advances to Total Advances
3. Credit Deposit Ratio

The Nationalised Banks in India have adhered to the Capital Adequacy Norms of the
Reserve Bank of India by maintaining their ratios well above the stipulated mandate
of 9%, have practiced lending to the secured sectors as they are risk free and a faster
turnover of deposits into loans to meet the needs of the community.

The study has shown that the majority of the other significant factors affecting the
financial performance of the nationalised banks based on Camel Analysis are
consistent with the results of Cluster Analysis and Discriminant Analysis. They are –

- Primary Sector Advances to Total Advances
- Net Non Performing Assets to Net Advances
- Profit per Employee
• Net Interest Income to Total Assets
• Intermediation Cost to Total Assets
• Burden to Total Assets
• Return on Assets

The nationalised banks lending to the priority sectors of credit, their severity of loss making and doubtful assets, branch productivity, core income from lending operations, control over the operating expenses and the efficient utilization of assets to generate revenues have influenced their financial performance based on the Camel Analysis.

The Factor Analysis has revealed that Operating Profits to Total Assets, Return on Advances and Interest Income to Total Assets are the important significant factors on the basis of the factor loadings that significantly influence the financial performance of the nationalised banks based on the Camel Analysis. This too is consistent with the results of the Cluster Analysis and Discriminant Analysis. A better control over the operating expenses would lead to better operating profits and concentration on core income from lending operations would lead to a high Net Interest Margin.

Neural Network Analysis has revealed that the most important significant factors affecting the financial performance of the nationalised banks based on Camel Analysis are the Non Interest Income to Total Assets, Business per Employee and Credit Deposit Ratio. It has implied that there should be a focus on the income from sources other than lending operations, increase in the labour productivity and a speedier conversion of deposits into advances.

To summarise, the main factors influencing the performance of the Nationalised Banks based on Camel Analysis are the income from lending operations, income from sources other than lending operations, efficiency in control of operating expenses, labour productivity, a good capital base to meet the risks, swift conversion of deposits into loans and granting of credit to the priority and secured sectors.
5.2.14 Bank-specific Factors that influence the financial performance of the Nationalised Banks based on Integrated Financial Performance Analysis

Cluster Analysis, Discriminant Analysis and Logistic Regression Analysis have illustrated 7 significant factors that are consistent in the results of all the three tests as the significant Bank-specific factors of integrated financial performance. They are –

1. Primary Sector Advances to Total Advances
2. Business per Employee
3. Net Interest Income to Total Assets
4. Non Interest Income to Total Assets
5. Intermediation Cost to Total Assets
6. Burden to Total Assets
7. Credit Deposit Ratio

The Nationalised Banks in India have practiced lending to the priority sectors, achieve labor productivity, emphasise on income from lending and other operations, control over operating expenses and a faster turnover of deposits into loans to meet the needs of the community.

The study has shown that the majority of the other significant factors affecting the financial performance of the Nationalised Banks based on Integrated Financial Performance are consistent with the results of Cluster Analysis and Discriminant Analysis. They are –

- Capital Adequacy Ratio
- Profit per Employee
- Return on Advances
- Efficiency
- Effectiveness
- Performance

The Nationalised Banks have to maintain an excellent capital base instead of relying on external sources to fund its growth, revenue generated by a single branch, income from loans and bills, reduction of inputs to be efficient and effective and top performers.
The Factor Analysis has revealed that Performance based on Data Envelopment Analysis, Operating Profits to Total Assets and Burden to Total Assets are the important significant factors on the basis of the factor loadings that influence the integrated financial performance of the Nationalised Banks. This too is consistent with the results of the Cluster Analysis, Discriminant Analysis and Logistic Regression Analysis. A better control over the operating expenses and focus on operating income, would lead to better operating profits and concentration on core income from lending operations would lead to a high Net Interest Margin, better utilization of inputs would lead to high efficiency, effectiveness and performance.

Neural Network Analysis has revealed that the most important factors affecting the integrated financial performance of the Nationalised Banks are the Credit Deposit Ratio, Capital Adequacy Ratio Tier I and Profit per Employee. It has implied that there has to be a speedier conversion of deposits into advances, maintenance of the Tier I Capital and labour productivity.

To summarise, the main factors influencing the integrated financial performance of the Nationalised Banks are the income from lending operations, income from sources other than lending operations, efficiency in control of operating expenses, labour productivity, a good capital base to meet the risks, swift conversion of deposits into loans and granting of credit to the priority sectors, utilization of inputs efficiently and effectively to be the best performing bank.

5.2.15 Determinants of Efficiency

The results of the Regression Analysis with Efficiency Score as the dependent variable and the 18 Bank-specific, 9 Industry-specific and 6 Macroeconomic Variables as the independent variables revealed 25.4% of the variations in the Efficiency scores. The significant factors affecting the efficiency scores are the Capital Adequacy Ratio Tier I, Primary Sector Advances to Total Advances, Net Non Performing Assets to Net Advances, Profit per Employee, Interest Income to Total Assets, Burden to Total Assets, Operating Profits to Total Assets, Cash Deposit Ratio, Herfindahl-Hirschman Index of Assets for the Private Banks and Herfindahl-
Hirschman Index of Net Interest Margin for the Foreign Banks. The model fit is not strong.

**5.2.16 Determinants of Effectiveness**

The results of the Regression Analysis with Effectiveness Score as the dependent variable and the 18 Bank-specific, 9 Industry-specific and 6 Macroeconomic Variables as the independent variables revealed 69.5% of the variations in the Effectiveness scores. The significant factors affecting the effectiveness scores are the Profit per Employee, Return on Equity, Interest Income to Total Assets, Net Interest Income to Total Assets, Non Interest Income to Total Assets, Herfindahl-Hirschman Index of Assets for the Foreign Banks, Herfindahl-Hirschman Index of Burden for the Foreign Banks, Gross Domestic Product Growth Rate, Investment Rate, Index of Industrial Production Growth Rate and Wholesale Price Index Annual Variation. Thus the Bank-specific, Industry-specific and Macro-Economic Variables have a significant effect on the Effectiveness Scores of the Nationalised Banks in India.

The nationalized banks in India should strive for employee and branch productivity, improved efficiency in management of operating expenses, increases in advances and investments amidst the presence of foreign banks with their low operating expenses. The macroeconomic indicators of the Gross Domestic Product, Index of Industrial Production and Wholesale Price Index have contributed inversely while the investment rate has contributed positively towards the effectiveness of the nationalized banks in India during the period 2001 - 2010.

**5.2.17 Determinants of Performance based on Data Envelopment Analysis**

The results of the Regression Analysis with Performance Score as the dependent variable and the 18 Bank-specific, 9 Industry-specific and 6 Macroeconomic Variables as the independent variables revealed 66% of the variations in the Performance scores. The significant factors affecting the performance scores are the Profit per Employee, Interest Income to Total Assets, Net Interest Income to Total Assets, Non Interest Income to Total Assets, Return on Assets, Herfindahl-Hirschman Index of Assets for the Foreign Banks, Herfindahl-Hirschman Index of Burden for the Foreign Banks, Gross Domestic Product Growth Rate, Index of Industrial Production Growth Rate and Wholesale Price Index Annual Variation. Thus the Bank-specific,
Industry-specific and Macro-Economic Variables have a significant effect on the Performance Scores of the Nationalised Banks in India.

The nationalized banks in India should strive for a good capital base, branch productivity, improved efficiency in management of operating expenses, increases in advances and investments amidst the presence of foreign banks with their low operating expenses. The macroeconomic indicators of the Gross Domestic Product, Index of Industrial Production and Wholesale Price Index have contributed inversely towards the performance of the nationalized banks in India during the period 2001 - 2010.

5.2.18 Effect of Size on Efficiency, Effectiveness and Performance
Small banks are found to more efficient, effective and better performers than large banks on an average. Mann Whitney U Test, a non parametric test was conducted to identify whether large and small banks differ significantly with regard to efficiency, effectiveness and performance. The test revealed that the large and small banks comprise same efficiency, effectiveness and performance.

5.2.19 Determinants of Integrated Financial Performance
The results of the Regression Analysis with Integrated Financial Performance Index as the dependent variable and the 18 Bank-specific, 9 Industry-specific and 6 Macro-Economic Variables as the independent variables revealed 82.3% of the variations in the Integrated Financial Performance Index. The significant factors affecting the Integrated Financial Performance are the –

1. Effectiveness with a positive effect
2. Capital Adequacy Ratio with a positive effect
3. Capital Adequacy Ratio Tier I with a positive effect
4. Primary Sector Advances to Total Advances with a positive effect
5. Net Non Performing Assets to Net Advances with a negative effect
6. Business per Employee with a positive effect
7. Operating Profits to Total Assets with a positive effect
8. Credit Deposit Ratio with a positive effect
9. Herfindahl-Hirschman Index of Assets for the Foreign Banks with a positive effect
11. Gross Domestic Product Growth Rate with a negative effect
12. Index of Industrial Production Growth Rate with a negative effect
13. Consumer Price Index Annual Variation with a negative effect

The nationalized banks in India should enhance the generation of net interest income and noninterest income, maintain the capital adequacy ratios above the stipulated levels of the Reserve Bank of India to withstand the risks and economic crisis, grant credit to the priority sectors, reduce the net non performing assets, mobilize deposits to achieve employee productivity, improve efficiency in management of operating expenses, faster turnover of deposits into advances amidst the due competition from foreign banks with their low operating expenses.

The Macroeconomic indicators of the Gross Domestic Product, Index of Industrial Production and Consumer Price Index have contributed inversely towards the Integrated Financial Performance of the nationalized banks in India during the period 2001 - 2010. They are showing a negative effect due to the stability and profitability of the nationalised banks in the period of recession and inflation.

5.2.20 Significant Model of Financial Performance Evaluation
The study had used two methodologies – the Camel Analysis and the Efficiency-Effectiveness-Performance based on Data Envelopment Analysis to evaluate the financial performance of the nationalised banks in India. The Chi Square Test was conducted to determine the significant relationship between the two models. The test results proved that there is no significant difference between the models of evaluation of financial performance.

5.3 Suggestions and Implications
The Suggestions put forth to the nationalised banks are –
- The nationalised banks should make an improvement in the broad areas of Asset Quality, Management, Earnings and Liquidity to improve their financial performance.
• The nationalised banks should practice efficiency and effectiveness in the utilization of Fixed Assets, Deposits, Borrowings, Number of Employees, Advances and Investments to be the top performing banks.

• The nationalised banks should enhance the generation of Net Interest Income and Non Interest Income with the same level of Advances and Investments to be the top performing banks.

• Though the nationalised banks are adhering to the Capital Adequacy Norms, it has to maintain the Capital Adequacy Ratios well above 9% to avoid the costs associated with external funding and mitigate the credit risk, market risk and operational risk involved in the banking operations.

• The nationalised bank’s lending of credit to the priority sectors should not be neglected as it has contributed positively to the financial performance though it could result in a Net Non Performing Asset.

• The nationalised banks should assess its risky and doubtful portfolio of assets that could hamper its financial performance.

• The nationalised banks have to increase the generation of deposits and lending of advances to achieve employee productivity.

• The nationalised banks must increase their efficiency in the management of operating expenses to reduce the burden and the intermediation cost.

• The nationalised banks should add more emphasis on the generation of Net Interest Income as its core revenue and not let Non Interest Income replace it as the core revenue.

• The nationalised banks should administer policies and practices that result in a swift transformation of deposits into advances to meet the financial needs of the community and contribute to the growth of the society.

• The nationalised banks should realise that the presence of Foreign Banks with their fewer branches and employees ought not to be ignored.

• The nationalised banks should comprehend the importance of the impact of the macro economic variables on its financial performance.

• The poor group of nationalised banks should improve their Capital Adequacy Ratio Tier I, decrease their Cash Deposit Ratio and Secured Advances to Total Advances to improve their financial performance.
To be an Excellent financial performance nationalised bank, the banks should achieve efficiency in the management of operating expenses, be swift in the transformation of deposits into advances, elimination of wastage in the utilization of inputs, employee productivity, excellent capital base, emphasis on the generation of income from lending operations and reduction in the doubtful and loss making assets.

The implications to the policy makers are –

- They should understand that the banking industry and the macro-economic policies have a significant impact on the financial performance of the banks.
- They should implement policies that aim at controlling inflation so that the banks can control the rise in its costs by the changes in its interest rates structure.
- They also should promote and implement favourable monetary and fiscal policies that promote investment and industrial activities in the economy as they have a significant impact on the financial performance of the banks.

5.4 Conclusion

The present study evaluated the financial performance of the nationalised banks in India for the period 2001 – 2010 on the parameters of Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, Efficiency and Effectiveness. Andhra Bank, Bank of Baroda, Bank of India, Corporation Bank and Oriental Bank of Commerce have emerged as the Excellent Nationalised Banks on the basis of their financial performance. Bank of Maharashtra, Central Bank of India, United Bank of India and UCO Bank are in the Poor group of Nationalised based on their financial performance.

The Poor group of Nationalised Banks should improve their Capital Adequacy Ratio Tier I, decrease their Cash Deposit Ratio and Secured Advances to Total Advances to improve their financial performance. The Nationalised Banks to be in the group of Excellent financial performance should decrease the Burden to Total Assets, Intermediation Cost to Total Assets and increase the Operating Profits to Total Assets, Profit per Employee, Return on Assets, Credit Deposit Ratio, Efficiency, Business per
Employee, Capital Adequacy Ratio, Non Interest Income to Total Assets, Return on Equity and Net Non Performing Assets to Net Advances. They should achieve efficiency in the management of operating expenses, be swift in the transformation of deposits into advances, elimination of wastage in the utilization of inputs, employee productivity, excellent capital base, emphasis on the generation of income from lending operations and reduction in the doubtful and loss making assets.

The aspect of concentration banking from the perspective of Assets and Burden of the Foreign Banks and the macroeconomic determinants of Gross Domestic Product, Index of Industrial Production and Inflation too have a significant impact on the financial performance of the nationalised banks. The policy makers should implement monetary, fiscal and financial intermediation policies that boost the economic growth, industrial production and control inflation.

The nationalised banks in India should excel in the broad areas of Asset Quality, Management, Earnings, Liquidity and Effectiveness. The nationalised banks with their consistent financial performance and operations are the catalyst for the growth and development of India and imparting social welfare to the public.