Analyse the Financial Soundness of Indian Banks
(A Comparative Study of Public and Private Sector Banks)

HARSHA BHIRYANI
Research Scholar

PRADEEP GUPTA
Prof. of Commerce
Govt. K.R.G. College, Gwalior
e-mail: pradeepkgupta1961@gmail.com

Abstract
Performance evaluation of the banking sector is an effective measure and indicator to check the soundness of economic activities of an economy. In the present study an attempt was made to analyses the financial strength of Indian banking industry by making a comparative study of public and private sector banks, this study attempts to measure the relative performance of Indian banks. For this study, we have used public sector banks and private sector banks. Selection of banks have been done on the basis of high paid up capital three each banks are selected from public and private sector named as Central bank of India, IOB, IDBI, HDFC, ICICI AND IndusInd bank. The period of the study is 2012-13. Financial strength of the banks is measured in terms of four parameters such as profitability, managerial efficiency, financial ratios and cash flow analysis. The analysis supports the conclusion that ICICI bank was on top most position, followed by HDFC and IDBI bank and Central bank of India was on the bottom most position, needs to improve profitability ratios and its financial condition. The overall composite ranks conclude that private sector banks are more efficient than the public sector banks. The public sector banks are not as profitable as other sectors are. It means the efficiency and profitability are interrelated. Besides it also attempts to compare the performance of these Banks with the help of Composite Ranking Method.

Keywords
Efficiency, Profitability, Segmentation, Performance, Indicators

Introduction
Banking sector is one of the fastest growing sectors in India, they play an important role in the mobilization of the deposits and disbursement of credit to various sectors of the economy. Profit earning and the increasing customer base the sole objective of the entire bank group keeping in view this competitive tendency of the banks. This paper attempts to measure competitiveness among Indian commercial banks in terms of their deposits, borrowings, loans and advances and investments related to different time periods. Due to globalization and liberalization, Indian banks are forced to develop controlling and management methods that ensure quick reaction to profitable transactions in order to gain financial strength. It is, therefore, necessary for banks to assess their financial position accurately to sustain in the growing competitive financial market. The impact
of regulatory changes on banks can be judged by
the gross measures of performance, such as
profitability, capital adequacy, income-
expenditure, cost, and deposit and efficiency
ratios.

The Indian Banking System: The Indian
Banks is structured into three sectors via, the
public sector, the private sector and foreign sector
banks. There are twenty seven public sector
banks: eight state banks (SBI & seven associates)
and nineteen nationalized banks, twenty nine
private banks (twenty one old private banks and
eight new private banks) and thirty foreign banks
as on 2009. The liberalization and globalization
has led to many changes in the Indian banking
sector. The Narasimham Committee Report
(1991) pointed out that the major reform process
in the Indian banking industry would improve the
operational and allocative efficiency of the
financial system. Due to these reforms, the
banking sector in India has undergone many
changes. Entry of private and foreign banks
created a competitive scenario for the public
sector banks. The composition of the Indian
banking sector changed with the emergence of
new private and foreign banks.

Literature Review
Jha and Sarangi (2011) analyzed the performance of
seven public sector and private sector banks for the
year 2009-10. They used three sets of ratios, operating,
performance ratios, financial ratios, and efficiency
ratios. In all eleven ratios were used. They found that
Axis Bank took the first position, followed ICICI Bank,
BOI, PNB, SBI, IDBI, and HDFC, in that order.
Gangway and Kapoor (2010) evaluated the financial
performance of nationalized banks in India and
assessed the growth index value of various parameters
through overall profitability indices. The data for 19
nationalized banks, for the post-reform period from
2002-03 to 2006-07, was used to calculate the index of
spread ratios, burden ratios, and profitability ratios.
Pat (2009) made an assessment of the RBI’s Report on
“Trend and Progress of Banking” in India, 2007-08,
which reported a relatively healthy position of the
Indian banking system.
Makesh (2008) evaluated the financial management
practices of Federal Bank and Dhanlakshmi Bank,
along with the SBI, for the financial year 2006-2007.
Joshi Vijaya (2007) observed that on the eve of
banking reforms Indian Banking Sector was
financially unsound, unprofitable and inefficient. They
made a critical examination of the changes that have
taken place in the banking sector after reforms.

Ratio Analysis Technique: A ratio is a
mathematical relationship between two related
items expressed in quantitative form. Ratio
Analysis serves the purpose of various parties
interested in financial statements. The object of
ratio analysis is to help management in analyzing
and interpreting the financial statement to get
adequate information. Trends in cost, Sales+profits and other related facts are revealed
by the past ratios and future events can be
forecasted on the basis of such trends, It is
analysis tacit for measuring the performance of
the banks.

Financial ratios are used by three main groups:
1. Managers who employ ratios to help analyze,
control and thus improve their firm’s operations
2. Credit Analyst: Such as bank loan officers or
bond rating analyst who analyze ratios to help
ascertain a bank’s ability to pay its debt.
3. Stock analyst: who are interested in company’s
efficiency risk and growth prospects.

Hypothesis: There is no significant difference in
performance of public and private sector as
assessed by ratio analysis.

Research Methodology: The present study is
a descriptive research based on cross sectional
research design and deductive research approach.
It is a ratio based model classified into 4
categories like profitability, managerial
efficiency ratios, financial ratios and cash flow ratios to
analyze the profitability, earning capacity, cash
position and financial soundness of the banks. The
objective of the research is to study the analysis of
the comparative performance of the public and
private sector by calculating different ratios.
Three each from public and private sector banks
are selected purposively for the study. The
selection of the banks had been done on the basis
of high paid up capital named as CBI, Indian
Overseas Bank, IDBI from public sector whereas
HDFC Bank, ICICI Bank and Indus Ind Bank
from private sector bank. The period for
evaluating their financial strength is for financial
year 2012-13.

Method of data collection: The present
study is based on secondary data such as annual
reports of the selected banks, economic Times
reports, books, journals for ratio analysis, dta
published in the annual publication on banking
and finance, RBI Annual Bulletins, http-moneycontrol.com are made use of. Data relevant to the research are collected from these sources. 

**Sampling:** The primary purpose of the study is to find out the best bank’s financial performance for the year 2012-13 in terms of profitability, efficiency, financial soundness and liquidity position. The study is about the performance analysis of selected public and private sector banks through ratio model. The samples are drawn by purposive sampling. The selection of the samples are based on the knowledge of a population and purpose of the study. In the study we have selected 3 each from public and private sector banks on the basis of high paid up capital purposively for the study.

**Objective of the study:**

1. To compare the relative position of various bank groups in Indian banking industry.
2. To know the best performing bank from the public and private sector in the year 2012-13 in terms of profitability and financial strength.
3. To calculate the returns of different banks and making comparative analysis for their future stability.

**Analysis and Interpretation**

**Profitability Ratios:** Profit earning is the main objective of every bank, an ability to earn maximum from the maximum use of available resources by the business concerns known as profitability. It is the relative measure of earning capacity. The profitability of a bank is measured by the following ratios:

1. **Operating Profit Margin ratio:** This ratio indicates how much a bank can earn profit from its operations to the total revenue which includes interest income and other income. Higher the ratio, higher the operating profitability of the bank.
2. **Net Profit Margin ratio:** This is a ratio between Net profit and total revenue, Net profit means profit after tax, and total revenue includes interest income and other income, higher ratio is preferable.
3. **Return on Net Worth:** It is measure of the profitability of a bank. Here profit after tax is expressed as a percentage of average net worth. Net worth includes share capital plus reserves and surplus.
4. **Return on Assets (PAT/AA):** This ratio measures return on assets employed or the efficiency in utilization of assets.
5. **Net interest margin ratio:** NIM is the difference between the interest income and the interest expended. It is expressed as a percentage of total assets; a higher spread indicates the better earnings given the total assets.

The various ratio’s reflecting profitability and earning capacity of the selected banks are shown in Table-1.

<table>
<thead>
<tr>
<th>Bank</th>
<th>Operating profit margin</th>
<th>Net Profit Margin to total Income</th>
<th>Return on Net Worth</th>
<th>Return on Assets</th>
<th>Net Interest Margin to Total Assets</th>
<th>Group Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBI</td>
<td>13.48%</td>
<td>6.31%</td>
<td>0.44%</td>
<td>2.3%</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>IOB</td>
<td>16.85%</td>
<td>4.21%</td>
<td>0.24%</td>
<td>2.26%</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>IDBI</td>
<td>19.3%</td>
<td>7.96%</td>
<td>0.72%</td>
<td>1.75%</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>HDFC</td>
<td>27.26%</td>
<td>18.57%</td>
<td>1.9%</td>
<td>4.28%</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ICICI</td>
<td>27.25%</td>
<td>12.48%</td>
<td>1.7%</td>
<td>2.7%</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>INDUS</td>
<td>22.03%</td>
<td>13.92%</td>
<td>1.63%</td>
<td>3.41%</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>IND</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is found that the HDFC bank secured the top position with highest average of operating profit margin to total income is 21.26, closely followed by ICICI bank 27.26, Central bank of India was at the bottom most position with a least average of 13.48%. In terms of net profit margin ratio, ICICI bank was at the top position with highest average of 17.19, followed by HDFC bank with average of 16.04, Indian Overseas bank stood at the last position with the least average of 2.50. In case of return on net worth ratio, again HDFC bank was at first position with the highest average of 14.71.
followed by IndusInd bank (13.92), Indian overseas bank was at the bottom most position with least average of 4.21%. Incase of Return on assets ratio HDFC bank secured the top position with the average of 1.90 closely followed by ICICI (1.70) and Indus Ind bank (1.63), Indian overseas bank was at the bottom position with the least average of 0.24%. in terms of Net interest margin, HDFC was at top position with the highest average of 4.28, IDBI was at the last position with least average of 1.75.

On the basis of five parameter of profitability ratios HDFC bank was at the top position with the group average of 1.2, followed by ICICI bank with an average of 2.2; Indian overseas bank stood at the bottom most position with least average of 5.6.

Managerial Efficiency Ratios:
Managerial Efficiency means follow up of defined norms, capability to plan and respond to dynamic environment and administrative ability of the bank. Effective management is one of the crucial factors behind any institutions performance.

1. Business per employee ratio:- This ratio shows the productivity of human force of bank. It is used as a tool to measure the efficiency of the employees of a bank in total business of the bank. It is calculated by dividing the total business with total number of employees higher the Ratio the better is for the bank and vice versa.

2. Profit per employee: - This shows the surplus earned per employee. It is calculated by dividing the profit after tax earned by the bank by the total number of employees. Higher a ratio, higher is the efficiency of the management and vice versa.

3. Price earnings ratio:- This ratio is calculated between market price per share and earning per share. Price earnings ratio is higher for firms with strong growth prospects other things held constant, but they are lower for risker firms, it shows how much investors are willing to pay off reported profits.

4. Dividend payout ratio:- This ratio is at rate of dividend to net profit which means how much part of earing per share will be distributes as dividend, The high payout ratio attracts the confidence of the investors but it should be less than 100%.

5. Total advances to Total deposits ratio:- This ratio measures the efficiency and ability of the banks management in converting the deposits available with the bank excluding other funds like equity capital etc. into advances with high yields.

6. Interest Income to Total fund:- this ratio calculate the interest from lending operations as a percentage of the total revenue means net sales, interest income includes interest on advance/ bills, income on investments, interest on balances with RBI and other interbank funds.

The various ratios reflecting managerial efficiency position of sample banks Shown in Table-

<table>
<thead>
<tr>
<th>Bank</th>
<th>Business per employee</th>
<th>Profit per employee</th>
<th>Price earnings ratio</th>
<th>Dividend payout ratio</th>
<th>Total Advances to Total Deposits</th>
<th>Interest Income to Total fund</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBI</td>
<td>97.30</td>
<td>3</td>
<td>0.28</td>
<td>5</td>
<td>5.95</td>
<td>4</td>
<td>2.24</td>
</tr>
<tr>
<td>IOB</td>
<td>128.80</td>
<td>2</td>
<td>0.20</td>
<td>6</td>
<td>10.60</td>
<td>4</td>
<td>32.57</td>
</tr>
<tr>
<td>IDBI</td>
<td>256.44</td>
<td>1</td>
<td>1.22</td>
<td>2</td>
<td>5.60</td>
<td>6</td>
<td>23.81</td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>5</td>
<td>1.00</td>
<td>3</td>
<td>21.95</td>
<td>1</td>
<td>19.39</td>
</tr>
<tr>
<td>-------</td>
<td>-----</td>
<td>-----</td>
<td>------</td>
<td>-----</td>
<td>-------</td>
<td>-----</td>
<td>-------</td>
</tr>
<tr>
<td>HDFC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICICI</td>
<td>73.50</td>
<td>6</td>
<td>1.40</td>
<td>1</td>
<td>14.47</td>
<td>3</td>
<td>27.71</td>
</tr>
<tr>
<td>INDUSIND</td>
<td>84.05</td>
<td>4</td>
<td>0.92</td>
<td>4</td>
<td>18.6</td>
<td>2</td>
<td>13.74</td>
</tr>
</tbody>
</table>

It is found that the IDBI Bank secured the top position with the highest average of 256.44 in case of business per employee ratio, followed by Indian Overseas Bank (128.80), ICICI was at the bottom most position with the least average of 73.50 but in case of profit per employee ratio, ICICI bank was at the top position with the highest average of 1.40 whereas Indian Overseas Bank stood at the last position with most position with highest average of 21.95, followed by IndusInd Bank (18.6). IDBI was at the bottom most position at the average of 5.6, the dividend payout ratio of Indian Overseas Bank is at the top position with the average of 32.57, followed by ICICI Bank (27.71), whereas the payout ratio of IndusInd Bank stood at the bottom most position with least average of 13.74% only. In case of total advances to total deposits ratio, ICICI Bank leads to all the other banks with the highest average of 99.19, followed by IDBI Bank (86.52), Central Bank of India secured the bottom most position with the least average of 76.06. Interest income to total fund ratio of IndusInd Bank was at the top most position with the average of 10.69, whereas ICICI Bank stood at the last position with an average of 7.81%.

On the basis of group averages of 6 sub parameters of managerial efficiency, both IDBI and ICICI Banks are at top position with equal average of 1.5, Central Bank of India stood at bottom most position with group average of 4.5.

**Financial Ratios:** It includes all ratios which highlights upon the financial position of the concern. They are based on the items of the balance sheet, the examination of financial position involves the analysis of facts relating to proper use of fund, short term and long term solvency of the concern, safety of the interest of shareholders. The significant ratios used as such type of analysis are as under:

1. **Capital Adequacy Ratio:** This ratio is propounded to ensure that banks can adopt a reasonable level of losses arising from operations and to ascertain bank’s loss bearing capacity. Higher the ratio means banks are stronger and the investors are more protected. Latest guideline for banks in India is to maintain CRAR of 9%

2. **Capital to Risk weighted Assets Ratio (Tier I and Tier II)/ Risk Weighted assets**

   Tier I includes shareholders equity, perpetual non-cumulative preference shares, disclosed reserves and innovative capital instruments.

   Tier II includes undisclosed reserves revaluation reserves of fixed assets, long term of equity securities, general provision/general loan loss reserves, hybrid debt capital instrument and subordinate debt.

3. **Debt-Equity Ratio:** The degree of leverage of a bank is reflected by debt equity ratio. It shows the proportion of debt and equity in the total finance of the bank. It is calculated by dividing debt with Net worth, debt includes deposits whereas net worth means share capital plus reserves and surplus, a higher ratio indicates less protection for the depositors and creditors and vice-versa.

4. **Advances to Total Asset Ratio:** This ratio is calculated by dividing the total advances with total asset. This ratio indicates banks aggressiveness in lending which ultimately leads to better profitability. Higher ratio is preferable to lower one.

5. **Current Ratio:** It is the ratio between current assets and current liabilities. Current ratio is used to measure the liquidity position of the concern and thus if reflects the short term solvency of the concern. As per the norms, the ideal current ratio is 1.33:1.
5. **Quick ratio:** - This ratio is the relationship between the quick assets and current liabilities. Quick assets include cash in hand, bank balance, readily saleable securities and other approved securities investments.

6. **Net NPA to Total Assets:** - This ratio indicates efficiency of bank in ascertaining the risk arising from credit and recovering debts. Under this ratio, the net NPA’S are expressed as a percentage of total assets. Lower the ratio reflects the better is the quality of advances and vice versa.

7. **Liquid assets to Total deposits:** - This ratio measures the liquidity available to the depositors of a bank. The liquid assets include cash in hand, money at call and short notice, balance with RBI and balance with other institution/banks (India and abroad) plus quickly realizable securities such as government securities, quoted shares and bank fixed deposits, higher the ratio means bank has safe liquidity position.

8. **Liquid Asset to Total Assets:** - This ratio measures the overall liquidity position of a bank. As described what includes in liquid assets, the total assets include the revaluation of the entire asset.

9. **Total Investments to Total Assets:** - This ratio reflects the extent of deployment of assets of a bank in investment as against advances. This ratio measures the proportion of total assets locked up in investments, a higher ratio represents that the bank has maintained high cushion of investments as a safeguard against NPA’s by adopting a conservative policy.

The different ratios measuring the financial strength of sample banks are shown in Table-3.

<table>
<thead>
<tr>
<th>Bank</th>
<th>Capital Adequacy Ratio</th>
<th>Debt to Equity Ratio</th>
<th>Advances to total assets</th>
<th>Current Ratio</th>
<th>Quick Ratio</th>
<th>Net NPA to total ratio</th>
<th>Liquid assets to total deposits</th>
<th>Liquid assets to total assets</th>
<th>Total Investment to total assets</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% R</td>
<td>T R</td>
<td>% R</td>
<td>T R</td>
<td>T R</td>
<td>% R</td>
<td>% R</td>
<td>% R</td>
<td>% R</td>
<td>Mean R</td>
</tr>
<tr>
<td>CBI</td>
<td>11.49</td>
<td>16.62 6</td>
<td>64.12 2</td>
<td>0.76 6</td>
<td>22.70 4</td>
<td>2.90 6</td>
<td>38.42 5</td>
<td>32.39 5</td>
<td>27 25</td>
<td>4.72 6</td>
</tr>
<tr>
<td>IOB</td>
<td>11.85</td>
<td>15.02 5</td>
<td>65.54 1</td>
<td>0.80 4</td>
<td>30.65 1</td>
<td>2.50 5</td>
<td>37.93 6</td>
<td>31.34 6</td>
<td>25 1</td>
<td>3.78 4</td>
</tr>
<tr>
<td>IDBI</td>
<td>13.13</td>
<td>8.16 3</td>
<td>60.83 3</td>
<td>0.86 2</td>
<td>24.82 2</td>
<td>1.58 4</td>
<td>51.30 2</td>
<td>36.07 3</td>
<td>31 5</td>
<td>3.11 3</td>
</tr>
<tr>
<td>HDFC</td>
<td>16.80</td>
<td>8.18 4</td>
<td>59.88 5</td>
<td>0.78 5</td>
<td>7.84 6</td>
<td>0.20 1</td>
<td>46.88 4</td>
<td>34.69 4</td>
<td>28 4</td>
<td>3.88 5</td>
</tr>
<tr>
<td>ICICI</td>
<td>18.74</td>
<td>4.39 1</td>
<td>54.07 6</td>
<td>0.98 1</td>
<td>10.53 5</td>
<td>0.77 3</td>
<td>72.72 1</td>
<td>39.65 1</td>
<td>32 6</td>
<td>2.78 2</td>
</tr>
<tr>
<td>Indus Ind</td>
<td>15.36</td>
<td>7.10 2</td>
<td>60.46 4</td>
<td>0.82 3</td>
<td>23.48 3</td>
<td>0.31 2</td>
<td>48.97 3</td>
<td>36.15 2</td>
<td>27 25</td>
<td>2.72 1</td>
</tr>
</tbody>
</table>

It is clear from this table that all the sample banks have higher CRAR ratio than prescribed level of 9% by RBI, It is found that the ICICI bank secured the top most position with highest average CRAR of 18.74, followed by HDFC bank (16.80). Central bank of India was at the bottom most position with a least average of11.49. In terms of debt –equity ratio ICICI bankwas at the top position with a least average of 4.39, Central bank of India was at the bottom most position with the highest risk of debts at the average of 16.62%. In case of advance to assets ratio, Indian overseas bank was at the top most position with the highest average of 65.54, followed by Central bank of India (64.12%), ICICI bank stood at bottom most position with an average of 54.07. in case of current ratio, It is clear that no bank has maintain a minimum favorable ratio of 1.33:1 as prescribed by RBI, but out of them ICICI bank secured the top position with the highest average of 0.98, followed by IDBI bank ( 0.86 ). Central bank of India stood at the last position with the least average of 0.76. In case of quick ratio all the banks have sufficient liquidity, Indian overseas bank was at the top most position with the highest average of 30.65, whereas HDFC bank was at the last position with an average of 7.84. Incase of net NPA’s to total asset ratio ,HDFC bank was at first
position with the least average of 0.20, followed by IndusInd bank (0.31), Central bank of India was at the bottom most position with the highest average of 2.90. In case of liquid assets to total deposits ratio, ICICI bank secured the top most position with the highest average of 72.72, whereas Indian overseas bank was at the bottom position with an average of 37.93 only. The ratio of liquid assets to total assets of ICICI bank is at the top position (39.65), on the other hand Indian overseas bank stood at the last position with an average of 31.34. Incase of total investment to total assets, Indian overseas bank secured the best position with an average of 25, followed by central bank of India and IndusInd bank (27), ICICI bank got the last position with the average of 32%

From the data analysis and on the basis of group average of four sub parameters of financial soundness of IndusInd bank was at the top position with group average of 2.72, Central bank of India stood at the bottom position with an average of 4.72.

Cash Flow Ratio's
Cash is really the life blood of a business, financial strength assessment typically look at cash and cash flow ratio, but their hidden agenda behind these ratio to assess the earning quality. Its best when cash flow March in step with exceed earnings.

1. Cash flow from operations to earnings ratio = \[ \frac{\text{Cash flow from operations}}{\text{Net earnings}} \]

Cash flow from operating activities to net earnings means Earning before tax (EBT). Because depreciation and other non-cash amortization vary by industry it’s hard to hang a specific goal on this measure. Further it's good when period to period earnings increases are accompanied by corresponding cash flow increases.

2. Overall cash flow ratio = \[ \frac{\text{Cash flow from operating activities}}{\text{Cash flow from investing activities + Cash flow from financing activities}} \]

The overall cash flow ratio tells whether a business is generating enough cash from its operations, to sustain itself, grow and return capital to its owners, if the cash flow ratio is greater than 1, the company is generating enough cash internally to cover business needs.

<table>
<thead>
<tr>
<th>Bank</th>
<th>Cash Inflow to Net Earnings</th>
<th>Overall Cash Flow Ratio</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Times</td>
<td>Rank</td>
<td>Times</td>
</tr>
<tr>
<td>CBI</td>
<td>-84.01</td>
<td>6</td>
<td>-1.03</td>
</tr>
<tr>
<td>IOB</td>
<td>-53.68</td>
<td>5</td>
<td>-1.5</td>
</tr>
<tr>
<td>IDBI</td>
<td>-11.19</td>
<td>2</td>
<td>-1.44</td>
</tr>
<tr>
<td>HDFC</td>
<td>-19.16</td>
<td>3</td>
<td>-0.23</td>
</tr>
<tr>
<td>ICICI</td>
<td>+97.4</td>
<td>1</td>
<td>+1.72</td>
</tr>
<tr>
<td>Indus Ind</td>
<td>-30.81</td>
<td>4</td>
<td>-21.19</td>
</tr>
</tbody>
</table>

The above two ratios reflecting the cash flow analysis of the sample banks, Incase of cash inflow from operating activities to net earnings ICICI bank secured the top most position with the highest average of 97.4, Central bank of India stood at the bottom most position with the negative average of (-84.01), In case of overall cash flow ratio , ICICI bank was at the top most position of 1.72, IndusInd bank stood at the last position with the average of (-21.19), ICICI bank is the only bank which shows positive ratio in all the sample banks.

On the basis of group rank, ICICI bank secured the top position ranked at 1, whereas Indian overseas bank stood at bottom most position with an average of 4.5.
Overall Composite Ranking

<table>
<thead>
<tr>
<th>Bank</th>
<th>Profitability ratio</th>
<th>Managerial-efficiency ratio</th>
<th>Financial Ratios</th>
<th>Cash Flow</th>
<th>Mean</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBI</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>5.25</td>
<td>6</td>
</tr>
<tr>
<td>IOB</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>5.5</td>
<td>5.125</td>
<td>5</td>
</tr>
<tr>
<td>IDBI</td>
<td>4</td>
<td>1.5</td>
<td>3</td>
<td>3</td>
<td>2.88</td>
<td>2.5</td>
</tr>
<tr>
<td>HDFC</td>
<td>1</td>
<td>3.5</td>
<td>5</td>
<td>2</td>
<td>2.88</td>
<td>2.5</td>
</tr>
<tr>
<td>ICICI</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
<td>1</td>
<td>1.63</td>
<td>1</td>
</tr>
<tr>
<td>Indus Ind</td>
<td>3</td>
<td>3.5</td>
<td>1</td>
<td>5.5</td>
<td>3.25</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 5 depicts the group ranking of the Indian public & private sector banks for the period of 2012-13. It is found that ICICI bank from the private sector was at the first position with the overall composite ranking average of 1.63, due to its better performance in areas of profitability, managerial efficiency and cash flow management, followed by HDFC bank and IDBI bank (2.88). Central bank of India holds the bottom most rank with overall composite ranking average of 5.25 due to poor managerial efficiency ratios, profitability and financial state.

Limitations of the study
1. The scope of the paper is limited to the Indian public & private sector banks only, foreign banks are not considered in the study.
2. Data are collected for the period of 2012-13 is for 1 year, so the analysis is based on the data is applicable only to that period.
3. The selection of the sample banks are made on the basis of high paid up capital only, not consider other parameters.
4. The study did not go in depth into the reasons of failure of some banks.

Statistical Techniques are used for testing the hypothesis
1. Spearman’s Ranking Correlation: Correlation technique has been used in basically three components of financial soundness are profitability ratios, managerial efficiency ratios and financial ratios.

Table 6

<table>
<thead>
<tr>
<th>Bank</th>
<th>Profitability Ratios</th>
<th>Managerial Efficiency</th>
<th>Financial Ratios</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>(\Sigma d_1^2)</th>
<th>(\Sigma d_2^2)</th>
<th>(\Sigma d_3^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBI</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>-1</td>
<td>0</td>
<td>-1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>IOB</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>IDBI</td>
<td>4</td>
<td>1.5</td>
<td>3</td>
<td>2.5</td>
<td>-1.5</td>
<td>1</td>
<td>6.25</td>
<td>2.25</td>
<td>1</td>
</tr>
<tr>
<td>HDFC</td>
<td>1</td>
<td>3.5</td>
<td>5</td>
<td>-2.5</td>
<td>-1.5</td>
<td>-4</td>
<td>6.25</td>
<td>2.25</td>
<td>16</td>
</tr>
<tr>
<td>ICICI</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
<td>0.5</td>
<td>-0.5</td>
<td>0</td>
<td>0.25</td>
<td>0.25</td>
<td>0</td>
</tr>
<tr>
<td>INDU SIND</td>
<td>3</td>
<td>3.5</td>
<td>1</td>
<td>-0.5</td>
<td>2.5</td>
<td>2</td>
<td>0.25</td>
<td>6.25</td>
<td>4</td>
</tr>
</tbody>
</table>

Correlation between profitability and Managerial Ratios \((R_1 - R_2)\)

\[
r = 1 - \frac{6\Sigma d_1^2}{n(n^2-1)} = 1 - \frac{6(15)}{6(6^2-1)} = 0.57
\]

Correlation between Managerial efficiency and financial ratios

\[
r = 1 - \frac{6\Sigma d_2^2}{n(n^2-1)} = 1 - \frac{6(12)}{6(6^2-1)} = 0.66
\]
Correlation between Profitability and Financial Ratios

\[
r = 1 - \frac{\sum d^2}{n(n^2-1)} = 1 - \frac{6^{(26)}}{6(6^2-1)} = 0.26
\]

From the above table it is clear that there is positive correlation between the ranks of profitability, managerial efficiency, and financial ratios of the selected banks.

**T-Test Techniques**

The test statistic in the t-test is known as the t-statistic. The t-test looks at the t-statistic, t-distribution and degrees of freedom to determine a p value (probability) that can be used to determine whether the population means differ. This technique has been used in the research to test the homogeneity between the ranks of different sub-parameters. We assume that there is no significant difference between the ranks of profitability ratios, managerial efficiency ratio, financial ratio, and cash flow ratios of the selected banks.

**Table-7**

<table>
<thead>
<tr>
<th>Bank</th>
<th>Mean Value</th>
<th>Standard Deviation</th>
<th>t-stat. value</th>
<th>Degree of freedom (n-1)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBI</td>
<td>5.25</td>
<td>0.96</td>
<td>1.82</td>
<td>3</td>
<td>3.182</td>
</tr>
<tr>
<td>IOB</td>
<td>5.125</td>
<td>0.85</td>
<td>2.206</td>
<td>3</td>
<td>3.182</td>
</tr>
<tr>
<td>IDBI</td>
<td>2.88</td>
<td>1.031</td>
<td>-0.601</td>
<td>3</td>
<td>3.182</td>
</tr>
<tr>
<td>HDFC</td>
<td>2.88</td>
<td>1.76</td>
<td>-0.352</td>
<td>3</td>
<td>3.182</td>
</tr>
<tr>
<td>ICICI</td>
<td>1.63</td>
<td>0.48</td>
<td>-3.90</td>
<td>3</td>
<td>3.182</td>
</tr>
<tr>
<td>INDUSIND</td>
<td>3.25</td>
<td>1.85</td>
<td>0.135</td>
<td>3</td>
<td>3.182</td>
</tr>
</tbody>
</table>

Mean of the population = 3.5

\[
t = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}
\]

It is clear from the above analysis, that t-value is lesser than p-value (at 5% level of significance) in all the banks except ICICI bank, so the null hypothesis is accepted that there is no significant difference in the performance or different parameters ranking of the sample banks.

**Tests of Normality**

ANOVA Results

For determining whether there is any significant between the means of public and private sector banks ratio, we applied one way ANOVA test on the data shown in table. The results of ANOVA test are presented in table 8.

**Table-8**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of freedom</th>
<th>Mean values</th>
<th>F- Value</th>
<th>Table value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>40.13</td>
<td>5</td>
<td>8.026</td>
<td>5.09</td>
<td>3.382</td>
</tr>
<tr>
<td>Within Groups</td>
<td>28.37</td>
<td>18</td>
<td>1.576</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>68.5</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(8% level of significance is 3.382). It means there is statistically significant difference between the mean values of public and private sector banks during the period of the study. Hence we reject the null hypothesis. It implies that there is significant difference in the performance of public and private sector banks.

**Findings and Conclusion**

The current study has been conducted to examine the earning capacity and financial strength of public and private sector banks by using ratio analysis model during the period 2012-13. The study revealed that.
1. HDFC bank stood at top position in terms of profitability, followed by ICICI bank.
2. In case of managerial efficiency, IDBI and ICICI were at top most position.
3. In context of financial soundness, IndusInd bank positioned at first.
4. In terms of cash flow position, ICICI bank rated first.
5. Overall performance table shows that ICICI bank is ranked first, followed by HDFC and IDBI bank.
6. Central Bank of India was on the last position in all four areas, needs to improve its managerial efficiency and balance sheet position.
7. The overall out comings are private sector banks are performing well in all aspects which is statistically proved.

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