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    REVIEW OF LITERATURE
    NEED/IMPORTANCE OF THE STUDY
    STATEMENT OF THE PROBLEM
    OBJECTIVES
    HYPOTHESES
    RESEARCH METHODOLOGY
    RESULTS & DISCUSSION
    FINDINGS
    RECOMMENDATIONS/SUGGESTIONS
    CONCLUSIONS
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ANALYSING INSOLVENCY RISK OF SELECTED INDIAN PUBLIC AND PRIVATE SECTOR BANKS THROUGH CAMEL PARAMETER

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ABSTRACT

The banking literature nowadays has focused on the insolvency risk exposures in ensuring banks safety and soundness. Undeniably, the interest in this subject is pronounced after the financial crisis. Therefore, The Main objective of the study is to compare the risk of selected Indian Public and Private sector Bank through CAMEL rating parameter (i.e. Capital Adequacy, Assets quality, Management efficiency, Earning ability and Liquidity). From the analysis and Interpretation, we observed that, under the Selected Public Sector banks United Commercial Bank (UCO), Indian Overseas and Allahabad Bank fall under high risk i.e. fourth category. Whereas Punjab National Bank (PNB) and Bank of Baroda (BOB) fall under the category I. category I- signifies good position of these banks. Under the Selected Private Sector banks, Jammu & Kashmir (J & K) Dhan Lakshmi bank and Lakshmi Vilas Bank fall under the Category IV which signifies high risk category of these banks, whereas HDFC and Karur Vaisya fall under the category I. category I- signifies good position of these banks. It can also suppose that, risky ness cannot be judged solely based on the absolute values of the CAMEL ratios.

KEYWORDS
CAMEL, Banking Sector, Insolvency risk, Risk, Selected Public Sector Banks, Selected Private Sector Bank.

1. INTRODUCTION

In the banking sector risk management can be defined as the set of policies, processes, and instruments for measuring, and controlling the credit, market or operation risk. till late 80's banks were practicing a health code to classify the assets and those assets which were not good were provided for but not in a systematic manner. Bad assets were transferred to bad debt accounts but the income recognition and asset classification norms were not in position. The Balance sheets did not disclose the risk transparently. The opening of the banking system on account of financial sector reforms brought in the IRAC norms and the capital adequacy norms. Application of these standards depicted the relative weakness of banks. The deregulation of markets brought forth the issue of market risk and the impact that commodity and financial product prices and volatility could have on the balance sheet of companies and banks. The introduction of capital adequacy norms which was gradually increased to the targeted 8% on uniform basis brought about financial stability. Today the financial sector has realized that its approach towards risk management should be more pronounced and more transparent that other businesses. In recent times there has been an increased attention to risk management at the banking level too. The CAMEL rating is significant to banking to judge bank performance and risk analysis. CAMEL approach is significant tool to assess the relative financial strength of a bank and to suggest necessary measures to improve weakness of a bank which resultant to minimization of risk. CAMEL rating is currently popular among regulators worldwide. In India RBI adopted this approach in 1996 followed on the recommendations of Padmanabham Working Group (1995) committee.

2. REVIEW OF LITERATURE

(Chakrabarty, 2013) in good health financial inclusion and the more efficient the banking system, the more it can aid financial inclusion, particularly because it can make the delivery of banking services cost-effective and can thereby ensure that improved access to banking services results in improved usage. Chaudhry and Singh (2012) analyzed the impact of the financial reforms on the soundness of Indian Banking through its impact on the asset quality. The study identified the key players as risk management, NPA levels, effective cost management and financial inclusion. Siva and Natarajan (2011) empirically tested the applicability of CAMEL norms and its consequential impact on the performance of SBI Groups. The study concluded that annual CAMEL scanning helps the commercial bank to diagnose its financial health and alert the bank to take preventive steps for its sustainability. Agoraki et al. (2009) find that capital requirements reduce risk in general, but for banks with higher market power this effect is significantly weaker or can be reversed. Gupta and Kaur(2008) assessed the performance of 20 old and 10 new Indian Private Sector Banks on the basis of Camel Model for the period of five years i.e., from 2003-07. Haselmann and Wachtel (2007) point out that the issues of risk-taking and risk management are not well-documented. Haselmann and Wachtel, (2006), implying that the results obtained for developed countries may not apply to the transition ones. Increased competition in the banking sector is typically seen as a threat to the solvency of financial institutions and the stability of the baking sector. In another international study, Pasiouras et al. (2006) find a negative relationship between capital requirements and overall banks' soundness as measured by Fitch ratings. The results of the global study of Barth et al. (2004) indicate that while more inflexible capital requirements are associated with fewer non-performing loans. Krishna Chaitanya (2005) used Z model to measure the financial distress of IDBI. Sarker (2005) scrutinized the CAMEL model for regulation and supervision of Islamic banks by the central banking Bangladesh. The study enabled the regulators and supervisors to get a Shariah benchmark to supervise and inspect Islamic banks and financial institutions from an Islamic perspective.

(Podpiera and Podpiera, 2005),find a negative and significant relationship between cost efficiency and the risk of a bank failure. Ninimaki (2004) shows that risk-taking depends on the structure of the market in which banks compete.Santos (1999) shows that an increase in capital standards results in lower incentives to take risk and therefore lower risk of insolvency. In the study conducted by (Sheeba Kapil) the degree to which supervisory CAMELS ratings reflect the level of risk taken by banks and the risk-taking efficiency of those banks were examined. The study suggests that supervisors not only distinguish between the risk-taking of efficient and inefficient banks, but they also permit efficient banks more latitude in their investment strategies than inefficient banks. The study conducted by Angadi and Devraj (1983) identifies the factors determining the profitability and productivity of public sector banks (PSBs) in India. The study conducted by Angadi and Devraj (1983) identifies the factors determining the profitability and productivity of public sector banks (PSBs) in India.M. Jaydev predicted that the result should be compared with the actual results and the weights assigned to the various financial parameters in the internal rating models. Nikolaos Gerntontinos Vergos,Apostolos G. Christopoulos examined whether Z-score model, developed by Altman 1993 can predict bankruptcies. The model is useful in identifying financially troubled companies that may fail up to 2 years before the bankruptcy. The study of Hirtle and Lopez captures the adequacy of CAMELS in projecting the overall performance of a bank.

3. RESEARCH METHODOLOGY

Methodology presents how the current study was designed, orchestrated and provides a clear and complete description of the specific steps that were taken to address the research objectives and test the hypotheses.

3.1.1 RATIONALE, RESEARCH QUESTION AND OBJECTIVES

3.1.1 RATIONALE

Lending always invokes some amount of risk. The investors should evaluate the borrowers' credit history i.e. track which reveal the morale of lenders. The basis for analysis and decision-making is financial information. Financial information is needed to predict, compare and evaluate the firms earning ability in all respects. The financial information is reported through the financial statement, and other accounting reports, like Trading Profit and Loss account, Balance sheet, Cash flow statement, Auditor's and director's reports Notes and annexure etc. It contain a wealth of information that if properly analyzed and interpreted can provide valuable insights of purposes which range from a simple analysis of short-term liquidity position of the firm to comprehensive assessment, of the strengths and weakness of the firm in various areas. In other words, financial statements are mirrors, which reflect the financial position and operating, strengths and weaknesses of the concern. These statements are useful to management, customers, investors and other interested parties. Hence, the present study seeks to make an in-depth analysis of the performance of Selected Indian Public and Private Sector banks.

3.1.2 RESEARCH QUESTION

The recent financial crisis has refocused attention on the general importance, impact and measurement of banks insolvency and liquidity risk. Lending by banks to the agriculturist on very low rate of Interest, exemption of principle amount. Subsidy policy etc. leads risk to the banking sector. The banking literature nowadays has focused on the insolvency risk exposures in ensuring banks safety and soundness. Undeniably, the interest in this subject is pronounced after the financial crisis. Therefore, the topic selected is ''Analysing Insolvency risk of selected Indian Public and Private sector Banks through CAMEL Parameter''.

3.1.3 OBJECTIVES OF THE STUDY

The Main objective of the study is to compare the risk of selected Indian Public and Private sector Bank through CAMEL rating model.

In order to achieve the main objective the following Sub-objectives have also been considered-

- To measure the Insolvency risk of the Selected Indian Public Sector Banks
- To compare the risk of selected Indian Private sector Banks
- To compare the risk of selected India Public and Private sector Banks
- To analyze and compare the capital adequacy, Assets quality, Management Efficiency,

Earning Quality and Liquidity through CAMEL rating model.

3.2 HYPOTHESES

Hypotheses are compiled here below and discussed in detail.

Ho1 There is no significant difference between selected Public and Private sector Bank in terms of Capital adequacy ratio
Ho2 There is no significant difference between selected Public and Private sector Bank in terms of Debt Equity ratio
Ho3 There is no significant difference between selected Public and Private sector Bank in terms of Advances to Total Assets ratio
Ho4 There is no significant difference between selected Public and Private sector Bank in terms of Government Securities to Total Investment ratio
Ho5 There is no significant difference between selected Public and Private sector Bank in terms of Return on Equity ratio.
Ho6 There is no significant difference between selected Public and Private sector Bank in terms of Gross NPA to Advances ratio
Ho7 There is no significant difference between selected Public and Private sector Bank in terms of Net NPA to Net Advances ratio
Ho8 There is no significant difference between selected Public and Private sector Bank in terms of Net NPA to Total Assets ratio
Ho9 There is no significant difference between selected Public and Private sector Bank in terms of Total Investment to Total Assets ratio
Ho10 There is no significant difference between selected Public and Private sector Bank in terms of Total Advances to Total Deposits ratio
Ho11 There is no significant difference between selected Public and Private sector Bank in terms of Business per Employee
Ho12 There is no significant difference between selected Public and Private sector Bank in terms of Profit per Employee ratio
Ho13 There is no significant difference between selected Public and Private sector Bank in terms of Return on Assets ratio
Ho14 There is no significant difference between selected Public and Private sector Bank in terms of Spread / Total Assets ratio
Ho15 There is no significant difference between selected Public and Private sector Bank in terms of Net Profit to Average Assets ratio
Ho16 There is no significant difference between selected Public and Private sector Bank in terms of Interest Income to Total Income ratio
Ho17 There is no significant difference between selected Public and Private sector Bank in terms of Non-Interest Income to Total Income ratio
Ho18 There is no significant difference between selected Public and Private sector Bank in terms of Liquid Assets to total Assets ratio
Ho19 There is no significant difference between selected Public and Private sector Bank in terms of Government Securities to Total Assets ratio
Ho20 There is no significant difference between selected Public and Private sector Bank in terms of Liquid Assets to Demand Deposits ratio
Ho21 There is no significant difference between selected Public and Private sector Bank in terms of Liquid Assets to Total Deposits ratio.

3.3 RESEARCH DESIGN

The research objectives of the present study indicate that research design is descriptive. This study is descriptive in nature since draw some conclusions have been from the collected data.

3.4 DATA COLLECTION

09 Banks from Public Sector and 09 Banks from Private Sector have been selected for the purpose of present study. Qualitative and quantitative data have been collected from the Primary and Secondary sources. Primary data has been collected for projection only. The major source of data analyzed and interpreted in this study related to banking companies is collected from various publications of Reserve Bank of India and Reports on trends and progress of banking in India. Reports on Currency and Finance, Economic survey, Libraries of various research institutions, referred National and International journals, reference books of India banking Association, Annual reports of selected banks for the study and various Internet resources have been used for the purpose of totality of the present study.

3.4.1 SELECTED PUBLIC SECTOR BANKS FOR THE STUDY

1Pb- Allahabad Bank,
2Pb- Bank of Baroda (BOB)
3Pb- Bank of India (BOI),
4Pb- Indian Overseas Bank (IN.O.S.)
5Pb- Oriental Bank of Commerce (OBC)
6pb Punjab National Bank(PNB)
7Pb- State Bank of India (SBI)
8Pb- United Commercial Bank (UCO)
9Pb- Union Bank.

3.4.2 SELECTED PRIVATE SECTOR BANKS FOR THE STUDY-

Pr1- Axis Bank
Pr2- Dhan Laxmi Bank (DHAN)
Pr3- HDFC Bank
Pr4- ICICI Bank
Pr5- INDUSIND Bank
Pr6 Jammu and Kashmir Bank (J&K)
Pr7- Karur Vaisya Bank (Karur)
Pr8- Kotak Mahindra Bank(KOTAK)
Pr9- Laxmi Vilas Bank(L.V.LAS).

3.4.3 THE DATA COLLECTION TOOL - CAMEL PARAMETER- In order to understand the basic interplay of the ratios analysis and assessing Insolvency risk in banking sector, it is better to calculate various ratios shaping under CAMEL rating. (With minor modifications). CAMEL is an acronym for five components of bank safety and soundness:

C- Capital adequacy
A- Asset quality
M- Management Efficiency

E- Earning ability and

L- Liquidity

For the study, the following ratios have been used to measure capital adequacy.

(1) CAPITAL ADEQUACY RATIO (%)	(2) DEBT EQUITY RATIO(%)
(3)ADVANCES TO TOTAL ASSETS (%)	(4) GOVERNMENT SECURITIES TO TOTAL NVESTMENTS (%)
(5) RETURN ON EQUITY (%)	

For the study, the following ratios have been used to measuring the assets quality.

(6) GROSS NPA TO NET ADVANCES RATIO	(7) NET NPA TO NET ADVANCES RATIO
(8) NET NPA TO TOTAL ASSETS RATIO	(9) TOTAL INVESTMENT TO TOTAL ASSETS RATIO

To measure the efficiency and effectiveness of management. the following ratios are considered.

(10) TOTAL ADVANCES TO TOTAL DEPOSITS RATIO	(11) BUSINESS PER EMPLOYEE
(12) PROFIT PER EMPLOYEE	

The following ratios in the dimension of earning ability of the banks to measure financial performance are considered.

(13) RETURN ON ASSETS RATIO	(14) SPREAD/ TOTAL ASSETS RATIO
(15) NET PROFIT TO AVERAGE ASSETS RATIO	(16) INTEREST INCOME TO TOTAL INCOME RATIO (%)
(17) NON INTEREST INCOME TO TOTAL INCOME RATIO (%)	

Following ratios have been used to measure liquidity position of banks.

(18)) LIQUID ASSETS TO TOTAL ASSETS (%)	(19) GOVERNMENT SECURITIES TO TOTAL ASSETS
(20) LIQUID ASSETS TO TOTAL DEPOSITS (%)	(21)) LIQUID ASSETS TO DEMAND DEPOSITS

During the process of evaluation of level of Risk of selected public and private sector banks, the different banks have obtained different ranks with respect to CAMEL ratios. The ratios depicting the CAMEL parameters were calculated based on the publicly available information published at various issues by Reserve Bank of India. Each of parameters was treated separately and the data related to the ratios were taken on an average over the ten years period (2004-2013). Based on the values of the ratios, selected banks were ranked. Final ranking of the banks were based on the average of all the parameters ranking and the average of the cumulative score. The categorization of the banks is based on the mean and standard deviation of the grand average score of the CAMEL model.

3.4.4 STATISTICL TOOLS

The following statistical tools have been used for the purpose of analysis, Interpretation, testing of hypothesis and validation of results.

1. Average for the calculating values for the purpose of evaluation and comparison between the selected Public and Private Sector banks.

2. Average of group rank has been calculated for the purpose of meaning full conclusion.

3. Standard deviation for distribution of CAMEL Score based on the Mean and the Standard deviation for the purpose of determination of level of Risk.

4. Independent Sample t-test (by using SPSS-17 Software.) for testing of hypothesis, analysis, interpretation and validation of results.

3.4.5 PERIOD OF THE STUDY: The study covers a period of Ten years (2004-2013).

4. DATA ANALYSIS & INTERPRETATION-PUBLIC SECTOR BANKS

4.1 GROUP RANKING OF THE SELECTED PUBLIC SECTOR BANKS

TABLE 4.1.1: GROUP RANKING OF THE SELECTED PUBLIC SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE CAPITAL ADEQUACY PARAMETER (C)

	1Pb- ALB-	2Pb-BOB	3Pb-BOI	4Pb-IN.O.S.	5Pb-OBC	6Pb-PNB	7Pb-SBI	8Pb-UCO	9Pb-UNION
1.CAR	6	1	9	2	7	4	5	8	3
2. D/E	1	2	3	4	8	6	7		5
3A/ T A	7	6	1	8	5	4	9	3	2
4.Gs/ T I	8	5	7	1	6	2	4	3	9
5.R / E	1	5	6	3	9	2	7	8	4
AVERAGE	4.6	3.8	5.2	3.6	7	3.6	6.4	5.5	4.6
RANK	4.5	3	6	1.5	9	1.5	8	7	4.5

(Pb-Public sector banks; 1.CAR-Capital Adequacy ratio; 2.D/E- Debt Equity ratio; 3. A/TA-Advances to Total Assets;4.Gs/TI- Government Securities to Total Investment; 5. R/E- Return on Equity.)

The group ranking of all the selected Public Sector banks under the Capital Adequacy parameter is presented in the table no.4.1.1 Indian Overseas Bank and Punjab National bank are on the top ranking and both are sharing the same rank i.e. 1.5 followed by Bank of Baroda. Oriental bank of Commerce ranked last in the group parameter.

TABLE 4.1.2: GROUP RANKING OF THE SELECTED PUBLIC SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE ASSETS QUALITY PARAMETER (A)

	1Pb- ALB-	2Pb-BOB	3Pb-BOI	4Pb-IN.O.S.	5Pb-OBC	6Pb-PNB	7Pb-SBI	8Pb-UCO	9Pb-UNION
6.GNPA/ N.AD	7	1	6	5	8	2	9	3	4
7.NNPA/NAD	4	2	7	5.5	3	1	8	9	5.5
8. NNPA/TA	4	1	6	5	3	2	9	8	7
9.T I / T A	8	2	1	6	4	5	9	6	3
AVERAGE	5.75	1.5	5	5.375	4.5	2.5	8.75	6.5	4.875
RANK	7	1	5	6	3	2	9	8	4

(6. GNPA Gross Non Performing Assets; N.AD-Net Advances; 7. NNPA-Net Non Performing Assets; 8.TA- Total Assets; 9. T.I.-Total Investment)

The group ranking of all the selected Public Sector banks on the Assets Quality parameter is presented in the table no.4.1.2. Bank of Baroda (BOB) demonstrated excellent assets management capability. Thus ranked-1 Punjab National Bank (PNB) and Oriental bank of Commerce (OBC) occupying 2nd & 3rd position respectively. It is evident that the State Bank of India (SBI) occupied the last position which is indicating that the assets management of State Bank of India is not at par when compared to its group members.

TABLE 4.1.3: GROUP RANKING OF THE SELECTED PUBLIC SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE MANAGEMENT QUALITY PARAMETER (M)

RATIO	1Pb- ALB-	2Pb-BOB	3Pb-BOI	4Pb-IN.O.S.	5Pb-OBC	6Pb-PNB	7Pb-SBI	8Pb-UCO	9Pb-UNION
10.TAd/TD	9	8	5	4	7	3	1	6	2
11.B.p.EM	6	2	3	7	1	8	9	5	4
12. P/ P.Emp	5	2	9	7	1	4	6	8	3
AVERAGE	6.67	4.00	5.67	6.00	3.00	5.00	5.33	6.33	3.00
RANK	9	3	6	7	1.5	4	5	8	1.5

(10. Tad-Total Advances; 11. B. p. EM-Business per Employee; 12. P/P. Emp- Profit Per Employee ;)

The group ranking of all the selected Public Sector banks on the Management Quality parameter under CAMEL analysis is presented in the table no.4.1.3. The first two positions in the parameter of management quality are shared by Oriental bank of Commerce (OBC) and Union bank and exhibited excellent managerial capability. Allahabad bank ranked last in the parameter of management quality.

TABLE 4.1.4: GROUP RANKING OF THE SELECTED PUBLIC SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE EARNINGS QUALITY PARAMETER (E)

	1Pb- ALB-	2Pb-BOB	3Pb-BOI	4Pb-IN.O.S.	5Pb-OBC	6Pb-PNB	7Pb-SBI	8Pb-UCO	9Pb-UNION
13.R. /A	3	5	8	6	2	1	6	9	4
14.S/T.A	5	7	9	3	1	2	4	8	6
15.NP/A.A	4	1	8	5	7	2	6	9	3
16.II/T.IN	5	7	8	4	1	6	9	2	3
17.NII/T.I	6	3	2	5	8	4	1		7
AVERAGE	4.6	4.6	7	4.6	3.8	3	5.2	7	4.6
RANK	**4.5**	**4.5**	**8.5**	**4.5**	**2**	**1**	**7**	**8.5**	**4.5**

(13 R/ A. Return / Assets; 14. S- Spread/ Total Assets; 15. NP/ A.A- Net Profit / Average Assets Ratio; 16. II/T.IN- Interest Income/ Total Income;17.NII/ T.I- Non Interest Income /Total Income.)

The group ranking of all the selected Public Sector banks on the Earning Quality parameter is presented in the table no.4.1.4 Punjab national bank (PNB) demonstrated excellent Earning capability. Thus ranked-1 and Oriental bank of Commerce (OBC) occupying 2nd position. The last top two positions are shared by Bank of India(BOI) and United commercial Bank(UCO). last position which is indicating that the assets management of State Bank of India(SBI) is not at par when compared to its group members; Thus ranked-9.

TABLE 4.1.5: GROUP RANKING OF THE SELECTED PUBLIC SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE LIQUIDITY PARAMETER (L)

	1Pb- ALB-	2Pb-BOB	3Pb-BOI	4Pb-IN.O.S.	5Pb-OBC	6Pb-PNB	7Pb-SBI	8Pb-UCO	9Pb-UNION
18.LA/TA	9	1	2	7	4	5	3	6	8
19.GS/TA	2	8	9	1	6	4	3	5	7
20.LA/DD	7	1	2	4	6	3	9	5	8
21.LA/TD	9	1	2	7	4	5	3	6	8
AVERAGE	6.75	2.75	3.75	4.75	5	4.25	4.5	5.5	7.75
RANK	**8**	**1**	**2**	**5**	**6**	**3**	**4**	**7**	**9**

(18. LA/TA- Liquid Assets/ Total Assets; 19. GS/TA- Government Securities/ Total Assets; 20. LA/DD- Liquid Assets/ Demand Deposits; 21.LA /TD- Liquid Assets / Total Deposits).

The group ranking of all the selected Public Sector banks on the Liquidity parameter is presented in the table no.4.1.5.Bank of Baroda demonstrated excellent ability to manage its liquidity and thus command the first position. Bank of India and Punjab National Banks are occupying 2nd and 3rd position. Union Bank was not so successful in the managing its liquidity. Thus ranked last on the Liquidity Parameter.

TABLE 4.1.6: OVERALL GRAND RANKING OF THE SELECTED PUBLIC SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) BASED ON THE CAMEL PARAMETER

Parameter	1Pb- ALB-	2Pb-BOB	3Pb-BOI	4Pb-IN.O.S.	5Pb-OBC	6Pb-PNB	7Pb-SBI	8Pb-UCO	9Pb-UNION
C	4.5	3	6	1.5	9	1.5	8	7	4.5
A	7	1	5	6	3	2	9	8	4
M	9	3	6	7	1.5	4	5	8	1.5
E	4.5	4.5	8.5	4.5	2	1	7	8.5	4.5
L	8	1	2	5	6	3	4	7	9
(R.)AV	**6.6**	**2.5**	**5.5**	**4.8**	**4.3**	**2.3**	**6.6**	**7.7**	**4.7**
Grand Ranking	**7.5**	**1**	**6**	**5**	**3**	**2**	**7.5**	**9**	**4**

5.1 DISCUSSION OF RESULTS OF THE SELECTED PUBLIC SECTOR BANKS BASED ON GRAND RANKING

The overall Grand ranking of the Selected Public Sector banks considering all the criteria ranking under Capital Adequacy, Assets Quality, Management Quality, Earning Quality and Liquidity parameter (CAMEL rating), analysis over the ten year period (2004-2013) presented in the table no.4.1.6 The group ranking of all the Selected Public Sector banks considered for the purpose of study is taken and averaged out to reach at the overall grand ranking. Bank of Baroda (BOB) ranked first under the CAMEL analysis followed by Punjab National Bank (PNB), Allahabad bank and State Bank of India (SBI) shared the same position. The last position under the CAMEL rating analysis is occupied by United Commercial Bank (UCO) amongst all the Selected Public Sector banks for the Study period 2004-2013.

TABLE 5.1.1: THE DISTRIBUTION OF THE CAMEL SCORE BASED ON THE MEAN AND THE STANDARD DEVIATION

STANDARD DEVIATION = 1.831		
AVERAGE OF RANK AVERAGES =5		
RANGE	**LOWER BOUND**	**UPPER BOUND**
Mean - 0.6745 sd (first 25%)		3.76
Mean– 0.6745 sd (up to Mean (25% - 50%)	3.76	5
Above Mean up to (Mean + 0.6745 sd (50% - 75%)	5	6.34
Above (Mean + 0.6745 sd (above 75%)	6.34	

TABLE: 5.1.2 CATEGORIZATION OF LEVEL OF RISK

CATEGORY- I (< 3.76)	CATEGORY- II (3.76 -5)	CATEGORY- III (>5-6.34	CATEGORY- IV (>6.34)
PNB (2.3)	OBC (4.30)	BOI (5.50)	ALB (6.60)
BOB (2.5)	UNION(4.70)		SBI (6.60)
	I.O.S.(4.80)		UCO (7.70)

5.2 DISCUSSION OF FINAL RESULTS- SELECTED PUBLIC SECTOR BANKS

Final result of the selected Public Sector banks have classified into four categories. The score of less than 3.76 constitutes the Selected Public Sector banks which fall into the category I, the next category II constitute the banks whose score varies between 3.76- 5.00. Category III score ranges between5-6.34, whereas the fourth category consists of banks having score greater than 6.34.

The selected Public Sector banks falling under category I- are Punjab National Bank (PNB) and Bank of Baroda (BOB). Oriental Bank of Commerce (OBC), Union Bank and Indian Overseas Bank constituted the category II. Category III consists of Bank of India (BOI). Allahabad Bank, State Bank of India and United Commercial Bank (UCO) are the banks which fall in the fourth category. (Table: 5.1.1 & 5.1.2).

6. DATA ANALYSIS & INTERPRETATION-PRIVATE SECTOR BANKS

6.1 GROUP RANKING OF THE SELECTED PRIVATE SECTOR BANKS

TABLE 6.1.1: GROUP RANKING OF THE SELECTED PRIVATE SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE CAPITAL ADEQUACY PARAMETER (C)

RATIO	Pr1-AXIX	Pr2-DHAN.	Pr3-HDFC	Pr4-ICICI	Pr5-INSIND	Pr6- J &K	Pr7-Karur	Pr8-KOTAK	Pr9-LAXMI.V
1.CAR	6	7	4	2	8	5	3	1	9
2. DE/E	5	1	7	8	3	4	6	9	2
3AD/ T A	8	4	9	6	3	7	1	5	2
4.GS/ T I	9	2	6	8	4	7	3	5	1
5.R / E	1	9	3	6	5	4	2	7	8
AVERAGE	5.8	4.6	5.8	6	4.6	5.4	3	5.4	4.4
RANK	**7.5**	**3.5**	**7.5**	**9**	**3.5**	**5.5**	**1**	**5.5**	**2**

The group ranking of all the selected Private Sector banks under the Capital Adequacy parameter is presented in the table no.6.1.1. Karur Vaisya Bank in on the top ranking. Karur Vaisya Bank is followed by Lakshami Vilas Bank and secured 2nd rank. ICICI bank ranked last in the group on the Capital Adequacy parameter.

TABLE 6.1.2: GROUP RANKING OF THE SELECTED PRIVATE SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE ASSETS QUALITY PARAMETER (A)

	Pr1-AXIX	Pr2-DHAN.	Pr3-HDFC	Pr4-ICICI	Pr5-INSIND	Pr6- J &K	Pr7-Karur	Pr8-KOTAK	Pr9-LAXMI.V
6.GNPA/ N.AD	1	9	2	6	7	3	4	5	8
7.NNPA/NAD	3	8	1	6	7	4	2	5	9
8. NNPA/TA	2	6	1	8	7	5	4	3	9
9.T I / T A	9	4	6	5	3	7	2	8	1
AVERAGE	3.75	6.75	2.5	6.25	6	4.75	3	5.25	6.75
RANK	3	8.5	1	7	6	4	2	5	8.5

The group ranking of all the selected Private Sector banks on the Assets Quality parameter is presented in the table no.6.1.2 HDFC Bank demonstrated excellent assets management capability. Thus ranked-1. Karur Vaisya bank and Axis bank occupying the 2nd and 3rd position respectively. It is evident that the Lakshmi Vilas Bank occupied the last position which is indicating that the assets management of Lakshmi Vilas Bank is not at par when compared to its group members.

TABLE 6.1.3: GROUP RANKING OF THE SELECTED PRIVATE SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE MANAGEMENT QUALITY PARAMETER (M)

RATIO	Pr1-AXIX	Pr2-DHAN.	Pr3-HDFC	Pr4-ICICI	Pr5-INSIND	Pr6- J &K	Pr7-Karur	Pr8-KOTAK	Pr9-LAXMI.V
10.TAD/TD	7	8	5	1	4	9	3	2	6
11.B.P.EM	1	9	4	3	2	6	5	8	7
12.Pr. P.E	2	9	3	1	4	7	5	6	8
AVERAGE	3.333	8.667	4	1.667	3.333	7.333	4.333	5.333	7
RANK	2.5	9	4	1	2.5	8	5	6	7

The group ranking of all the selected Private Sector banks on the Management Quality parameter under CAMEL analysis is presented in the table no.6.1.3. The first position in the parameter of management quality is secured by ICICI bank exhibited excellent managerial capability. Dhan Lakshmi bank ranked last in the parameter of management quality which indicates that the Management quality is not good.

TABLE 6.1.4: GROUP RANKING OF THE SELECTED PRIVATE SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE EARNINGS QUALITY PARAMETER (E)

RATIO	Pr1-AXIX	Pr2-DHAN.	Pr3-HDFC	Pr4-ICICI	Pr5-INSIND	Pr6- J &K	Pr7-Karur	Pr8-KOTAK	Pr9-LAXMI.V
13.R. /ASS	4	9	3	5	7	6	1	1	8
14.S/T.A	5	6	2	9	8	4	3	1	7
15.NP/A.A	5	8	1	4	7	6	2	3	9
16.II/T.IN	8	3	7	9	5	1	4	6	2
17.NII/T.I	4	7	5	2	3	9	6	1	8
AVERAGE	5.2	6.6	3.6	5.8	6	5.2	3.2	2.4	6.8
RANK	**4.5**	**8**	**3**	**6**	**7**	**4.5**	**2**	**1**	**9**

The group ranking of all the selected Private Sector banks on the Earning Quality parameter is presented in the table no.6.1.4 Kotak Mahindra Bank demonstrated excellent Earning capability. Thus ranked-1 and Karur Vaisya bank occupying 2nd position the last position occupied by Lakshmi Vilas Bank which is indicating that the assets management of Lakshmi Vilas Bank is not at par when compared to its group members.

TABLE 6.1.5: GROUP RANKING OF THE SELECTED PRIVATE SECTOR BANKS FOR THE STUDY PERIOD (2004-2013) ON THE LIQUIDITY PARAMETER (L)

RATIO	Pr1-AXIX	Pr2-DHAN.	Pr3-HDFC	Pr4-ICICI	Pr5-INSIND	Pr6- J &K	Pr7-Karur	Pr8-KOTAK	Pr9-LAXMI.V
18.LA/TA	2	3	1	6	5	4	8	9	7
19.GS/TA	8	2	3	9	6	7	4	1	5
20.LA/DD	7	4	9	2	1	5	6	8	3
21.LA/TD	2	4	3	1	7	6	9	8	5
AVERAGE	4.75	3.25	4	4.5	4.75	5.5	6.75	6.5	5
RANK	4.5	1	2	3	4.5	7	9	8	6

The group ranking of all the selected Private Sector banks on the Liquidity parameter is presented in the table no.6.1.5.Dhan Lakshami Bank demonstrated excellent ability to manage its liquidity and thus command the first position. HDFC Bank and ICICI Banks are occupying 2nd and 3rd position. Karur Vaisya Bank was not so successful in the managing its liquidity. Thus ranked last on the Liquidity Parameter.

TABLE 6.1.6: OVERALL GRAND RANKING OF THE SELECTED PRIVATE SECTOR BANKS FOR THE STUDY PERIOD (2004-2013)BASED ON THE CAMEL PARAMETER

Parameter	Pr1-AXIX	Pr2-DHAN.	Pr3-HDFC	Pr4-ICICI	Pr5-INSIND	Pr6- J &K	Pr7-Karur	Pr8-KOTAK	Pr9-LAXMI.V
C	7.5	3.5	7.5	9	3.5	5.5	1	5.5	2
A	3	8.5	1	7	6	4	2	5	8.5
M	2.5	9	4	1	2.5	8	5	6	7
E	4.5	8	3	6	7	4.5	2	1	9
L	4.5	1	2	3	4.5	7	9	8	6
RANK AVG	4.4	6.	3.5	5.2	4.7	5.8	3.8	5.1	6.5
GRAND RANKING	3	8	1	6	4	7	2	5	9
AVERAGE OF RANK AVERAGES =5									
STANDARD DEVIATION = 1.004									

7.1 DISCUSSION OF RESULTS OF THE SELECTED PRIVATE SECTOR BANKS: BASED ON GRAND RANKING

The overall Grand ranking of the Selected Private Sector banks considering all the criteria ranking under Capital Adequacy, Assets Quality, Management Quality, Earning Quality and Liquidity parameter (CAMEL rating),analysis over the ten year period (2004-2013) presented in the table no.6.1.6. The group ranking of all the Selected Private Sector banks considered for the purpose of study is taken and averaged out to reach at the overall grand ranking. HDFC Bank ranked first under the CAMEL analysis followed by Karur Vaisya Bank. The last position under the CAMEL rating analysis is occupied by Lakshmi vilas Bank amongst all the Selected Private Sector banks for the Study period 2004-2013.

TABLE 7.1.1: THE DISTRIBUTION OF THE CAMEL SCORE BASED ON THE MEAN (5) AND THE STANDARD DEVIATION (0.56125)

RANGE	LOWER BOUND	UPPER BOUND
Mean – 0.6745 sd (first 25%)	___	4.32
Mean – 0.6745 sd (up to Mean (25% - 50%)	4.32	5
Above Mean up to (Mean + 0.6745 sd (50% - 75%)	5	5.68
Above (Mean + 0.6745 sd (above 75%)	5.68	__

CATEGORIZATION(LEVEL OF RISK)			
CATEGORY- I (< 4.32	**CATEGORY- II (4.32 - 5)**	**CATEGORY- III (>5-5.68**	**CATEGORY- IV (>5.68)**
Pr3-HDFC (3.50)	Pr1 AXIS (4.40)	Pr8 KOTAK (5.10)	Pr6 J & K(5.80
Pr7 KARUR (3.80)	Pr4 INDSIND(4.70)	Pr4 ICICI (5.20)	Pr2 DHAN L.(6.00)
			Pr9 LAXMI.V (6.5)

7.2 DISCUSSION OF FINAL RESULTS- SELECTED PRIVATE SECTOR BANKS

Final result of the Selected Private Sector banks have classified into four categories. The score of less than 4.32 constitutes the Selected Private Sector banks which fall into the category I, the next category II constitute the banks whose score varies between 4.32 -5.00. Category III score ranges between5-5.65, whereas the fourth category consists of banks having score greater than 5.68. **Table:7.1.2** The Private sector banks falling under first category are HDFC and Karur Vaisya Bank. Axix bank and INDSIND Bank constitute the Category II. Category III consists of Kotak Mahindra Bank and ICICI Bank. Category consists of IV Jammu & Kashmir bank, Dhan Lakashmi and Laxmi Vilas Bank. (Table: 7.1.1 &7.1.2).

8.1 HYPOTHESES RESULTS & INTERPRETATIONS

HYPOTHESIS	RESULTS	INTERPRETATION
Ho1- Ho1 There is no significant difference between selected Public and Private sector banks in term of Capital adequacy ratio. The P- value of Capital adequacy ratio is less than 0.05, hence null hypothesis is rejected, and It means that there is significant difference in Capital adequacy ratio of Group 1 and Group 2.	**Rejected**	The average capital ratio recorded as 12.74 and 13.99 respectively. It explains there is no difference regarding Capital Adequacy of selected public and private sector bank. The selected Public and Private sector banks have achieved a better result than standard (RBI norms 9%) in relation to Capital adequacy ratio.
Ho2- There is no significant difference between selected Public and Private sector banks in term of Debt Equity ratio. The p-value of Debt Equity ratio is less than .05, hence null hypothesis is rejected. It means that there is significant difference in Debt Equity ratio of Group 1 and Group 2.	**Rejected**	This ratio is an indicator of financial leverage. Mean value of selected public and Private sector banks are 17.12 and 11.22 respectively, which is more than selected private sector banks and the difference is 5.90 It clears that, the Debt Equity ratio is more compared than Selected Private Sector banks.
Ho3- There is no significant difference between selected Public and Private sector banks in term of Advance to Total Assets ratio. The p-value of Advance to Total Assets ratio is more than .05; hence null hypothesis is not rejected. It means that there is no significant difference in Advance to Total Assets ratio of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded quite healthy average ratio as 57.64 and 55.41 respectively.
Ho4- There is no significant difference between selected Public and Private sector banks in term of Government Securities to Total Investment ratio. The P- value of Government Securities to Total Investment ratio. is less than 0.05, hence null hypothesis is rejected, It means that there is significant difference in Government Securities to Total Investment ratio of Group 1 and Group 2.	**Rejected**	Selected Public and Private sector banks recorded average ratio as 82.40% and 75.70% respectively this is an indication of conservatism and indicates that all the selected banks have decided preference toward risk free securities.
Ho5- There is no significant difference between selected Public and Private sector banks in term of Return on Equity ratio. The P- value of Return on Equity ratio is less than 0.05, hence null hypothesis is rejected, and It means that there is significant difference in Return on Equity ratio of Group 1 and Group 2.	**Rejected**	Selected Public and Private sector banks recorded average ratio as17.96 and 14.64 respectively Return on Equity are more compared with selected Public sector banks.

Ho6- There is no significant difference between selected Public and Private sector banks in term of Gross NPA to Net advances. The p-value of Gross NPA to Net advances ratio is more than .05, hence null hypothesis is not rejected. It means that there is no significant difference in Gross NPA to Net advances of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as 1.4301 and 1.2378 respectively. well compared with Selected Public sector banks.
Ho7 There is no significant difference between selected Public and Private sector banks in term of Net NPA to Net Advances ratio. The p-value of Net NPA to Net Advances ratio is more than .05; hence null hypothesis is not rejected. It means that there is no significant difference in Net NPA to Net Advances of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as 1.4301 and 1.2378 respectively. The ratios are well compared.
Ho8 There is no significant difference between selected Public and Private sector banks in term of Net NPA to Total Assets ratio. The P- value of Net NPA to Total Assets ratio is less than 0.05, hence null hypothesis is rejected, and It means that there is significant difference in Net NPA to Total Assets ratio of Group 1 and Group 2.	**Rejected**	Selected Public and Private sector banks recorded average ratio as 0.91966292 and 0.602224719. the average is well compared.
Ho9 There is no significant difference between selected Public and Private sector banks in term of Total Assets to Total Investments ratio. The p-value of Total Assets to Total Investments ratio is more than .05; hence null hypothesis is not rejected. It means that there is no significant difference in Total Assets to Total Investments ratio of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as 29.69 and 30.66 respectively. Hence, it can be conclude that, All the Public and Private sector banks have conservatively kept a moderate cushion of Investment guard against NPAs.
Ho10 There is no significant difference between selected Public and Private sector banks in term of Total Advances to Total Deposits ratio. The p-value of Total Advances to Total Deposits ratio is more than .05; hence null hypothesis is not rejected. It means that there is no significant difference in Total Advances to Total Deposits ratio. of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as 68.4001and 73.0724respectively. It is quite evident that, the ratio is quite impressive.
Ho11 There is no significant difference between selected Public and Private sector banks in term of Business Per Employee ratio. The p-value of Business Per Employee is more than .05, hence null hypothesis is not rejected. It means that there is no significant difference in Business Per Employee. Of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as 725.9182 and 701.1349 respectively, It is quite evident that the average Business Per Employee of selected is quite impressive. Whereas Business Per Employee ratio of SBI and Jammu and Dhan Laxmi bank is lowest.
Ho12 There is no significant difference between selected Public and Private sector banks in term of Profit per Employee ratio. The P- value of Profit per Employee ratio is less than 0.05, hence null hypothesis is rejected, It means that there is significant difference in Profit per Employee ratio of Group 1 and Group 2.	**Rejected**	Selected Public and Private sector banks recorded average ratio as 4.3200 and 6.2198 respectively, the ratios are quite impressive amongst the selected public and Private sector banks. Profit Per Employee is more compared with Selected Private sector banks.
Ho13 There is no significant difference between selected Public and Private sector banks in term of Return on Assets Ratio. The p-value of Return on Assets Ratio is more than .05; hence null hypothesis is not rejected. It means that there is no significant difference in Return on Assets Ratio of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as 1.3740and 1.1646 respectively hence, it can be conclude that, all the selected banks should generate sufficient return on assets.
Ho14 There is no significant difference between selected Public and Private sector banks in term of Spread ratio. The p-value of Spread ratio is more than .05; hence null hypothesis is not rejected. It means that there is no significant difference in Spread ratio of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as 2.6743 and 2.7283 respectively. It is observed that, there is a fluctuation in this ratio during the study period.
Ho15 There is no significant difference between selected Public and Private sector banks Net Profit to average Assets Ratio. The p-value of Net Profit to average Assets Ratio is more than .05; hence null hypothesis is not rejected. It means that there is no significant difference in Net Profit to average Assets Ratio of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as 1.1048 and 1.2139 respectively. It is observed that, the selected public sector banks should generate sufficient return on their average assets.
Ho16 There is no significant difference between selected Public and Private sector banks in term of Interest Income to Total Income ratio. The P- value of Interest Income to Total Income ratio is less than 0.05, hence null hypothesis is rejected, and It means that there is significant difference in Interest Income to Total Income ratio of Group 1 and Group 2.	**Rejected**	Selected Public and Private sector banks recorded average ratio as 87.4213 % and 84.3831 % respectively. It is evident that the entire selected bank generated high percentage of Interest Income to total Income.
Ho17 There is no significant difference between selected Public and Private sector banks in term of Non-Interest Income to Total Income ratio. The p-value of Non-Interest Income to Total Income ratio is more than .05, hence null hypothesis is not rejected. It means that there is no significant difference in Non-Interest Income to Total Income ratio of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded average ratio as26.8768 and 17.1939 % respectively It concludes that all the selected banks have a sufficient Non Interest Income to Total Income.
Ho18 There is no significant difference between selected Public and Private sector banks in terms of Liquid assets to Total Assets ratio. The P- value of Liquid assets to Total Assets ratio is less than 0.05, hence null hypothesis is rejected, It means that there is significant difference in Liquid assets to Total Assets ratio of Group 1 and Group 2.	**Rejected**	Selected Public and Private sector banks recorded average ratio as 0.12971591 and 0.0933933 which is more compared.
Ho19 There is no significant difference between selected Public and Private sector banks in term of Government Securities to Total Assets ratio. The p-value of Government Securities to Total Assets ratio. is more than .05, hence null hypothesis is not rejected. It means that there is no significant difference in Government Securities to Total Assets ratio of Group 1 and Group 2.	**Not Rejected**	23.6201 and 22.6978 respectively, it can be conclude that, the all selected Public and Private sector banks registered declined annual growth rate.

Ho20 There is no significant difference between selected Public and Private sector banks in term of Liquid Assets to Demand Deposits ratio. The P- value of Liquid Assets to Demand Deposits ratio is less than 0.05, hence null hypothesis is rejected, It means that there is significant difference in Liquid Assets to Demand Deposits ratio of Group 1 and Group 2.	**Rejected**	Selected Public and Private sector banks recorded average ratio as 1.2988 and .9390 respectively. Liquidity is more compared to Selected Private Sector banks.
Ho-21 There is no significant difference between selected Public and Private sector banks in term of Liquid Assets to Total Deposits ratio. The p-value of Liquid Assets to Total Deposits ratio .is more than .05, hence null hypothesis is not rejected. It means that there is no significant difference in Liquid Assets to Total Deposits ratio. of Group 1 and Group 2.	**Not Rejected**	Selected Public and Private sector banks recorded Average ratio as 10.6370and 12.1272 respectively. It concluded that, all the selected banks maintained a Fair ratio.

8.2 CONCLUSION

From the analysis and Interpretation, we conclude that, under the Selected Public Sector banks for the study period (2004-2013), United Commercial Bank (UCO), Indian Overseas and Allahabad Bank fall under high risk i.e. fourth category. Whereas Punjab National Bank and Bank of Baroda fall under the category I. category I- signifies good position of these banks.

Under the Selected Private Sector banks, Jammu & Kashmir (J & K) Dhan Lakshmi bank and Lakshmi Vilas Bank fall under the Category IV which signifies high risk category of these banks whereas HDFC and Karur Vaisya fall under the category I. category I- signifies good position of these banks. However, all these banks which are falling under category IV cannot be judged solely based on the absolute values of the CAMEL ratios.

One of the objective of this study is to compare the risk of the Selected India Public and Private Sector Banks and analyze the risk ,on this basis 21 null hypotheses have been formulated, for testing of hypothesis, Independent Sample t-test has been applied.

Hypothesis no.1, 2, 4, 5,8,12,16, 18 and 20 have been rejected Therefore, it conclude that, there is significant difference between Selected Public Sector banks (group-1) and Selected Private Sector banks (group-2). Hypothesis no. 3, 6, 7, 9.10.11, 13, 14, 15, 17 19, and 21 have not been rejected. Therefore, it concludes that, there is no significant difference between the Selected Public Sector banks (group-1) and Selected Private Sector banks (group-2).

9. LIMITATIONS OF THE STUDY

The major limitation of the present study is that the analysis is restricted to one particular sector such as the inherent limitation is secondary data. The published data is not uniform and not properly disclosed by the banks. This study is confined to only analyzed the Level of risk of Selected Public and Private Sector banks for the Study period 2004-2013. Ranking the commercial banks is difficult to the extent that any type of ranking is subjected to lot of criticism as the ratios used for the purpose of ranking can be interpreted in the way one like. Judgment of the risk can't 'be solely based on the absolute values of the CAMEL ranking. Moreover the sensitive nature of the financial information imposes the several other limitations, and to come out with any meaningful conclusion become even more difficult. Hence, this may be taken as another limitation.

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