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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

SCOPE FOR FURTHER RESEARCH

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REFERENCES

APPENDIX/ANNEXURE

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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

FINANCIAL PERFORMANCE OF SELECT PRIVATE SECTOR BANKS USING CAMEL APPROACH

DR. H N SHIVAPRASAD
DIRECTOR
DR. D VEERENDRA HEGGADE INSTITUTE OF MANAGEMENT STUDIES & RESEARCH
VIDYAGIRI

ABSTRACT

Financial performance analysis is the process of scientifically making a proper, critical and comparative evaluation of profitability and the financial health of banks through the application of the technique of financial statement analysis. In the present study CAMEL Model has been applied for the same purpose. The paper evaluates the performance of five leading private sector banks using CAMEL framework. The CAMEL approach has been used using 17 financial ratios spanning across the CAMEL indictors. The study spanned a period 10 years (2004 -2013). Group and composite rankings has been done to evaluate the performance. ANOVA has been used to measure the variations in performance in the banks.

KEYWORDS
Financial performance, private banks.

1. INTRODUCTION

Financial performance analysis is the process of scientifically making a proper, critical and comparative evaluation of profitability and the financial health of banks through the application of the technique of financial statement analysis. Financial analysis covers a vast area and is of great practical importance. In the present study CAMEL Model has been applied for the same purpose. In the present study, following financial ratios under CAMEL Model have been used for the analysis of financial performance.

C - Capital adequacy	Capital Adequacy Ratio Total Assets Turnover Ratio Tier-1 Capital Adequacy Ratio
A - Asset quality	Gross NPA's To Gross Advances, Percentage Change In Net NPA's , Priority Sector Advances As A % Of Total Advances
M - Management	Total Advances To Total Deposits (Credit Deposit Ratio) Net Profit Per Ratio Report Return On Net Worth Net Profit Margin.
E - Earning quality	Dividend Per Share Net Interest Income To Total Funds Earnings Per Share Operating Profit Per Share Operating Profit As A % Of Working Funds
L - Liquidity	Liquid Ratio Quick Ratio

C- CAPITAL ADEQUACY
Capital base of financial institutions facilitates depositors in forming their risk perception about the institutions. The most widely used indicator of capital adequacy is capital to risk-weighted assets ratio (CRWA).

A – ASSET QUALITY
Asset quality determines the healthiness of financial institutions against loss of value in the assets. The weakening value of assets, being prime source of banking problems, directly pour into other areas, as losses are eventually written-off against capital, which ultimately expose the earning capacity of the institution. The asset quality is gauged in relation to the level and severity of non-performing assets, adequacy of provisions, recoveries, distribution of assets etc. Popular indicators include nonperforming loans to advances, loan default to total advances, and recoveries to loan default ratios.

M – MANAGEMENT EFFICIENCY
Performance evaluation includes compliance with set norms, ability to plan and react to changing circumstances, technical competence, leadership and administrative ability of the bank. Sound management is one of the most important factors behind financial institutions performance.

E –EARNING ABILITY
Earnings and profitability, the prime source of increase in capital base, is related with regards to interest rate policies and adequacy of provisioning. Good earnings and profitability of banks reflects the ability to support present and future operations. Specifically, earnings ability determines the capacity to absorb losses, finance its expansion, pay dividends to its shareholders, and build up an adequate level of capital.

L – LIQUIDITY
An adequate liquidity position refers to a situation, where institution can obtain sufficient funds, either by increasing liabilities or by converting its assets quickly at a reasonable cost.

2. LITERATURE REVIEW

The following are the key studies in the area of bank performance by various academicians and scholars in the field.

Barker and Holdsworth (1993) study found that the CAMEL approach is very useful for measuring performance of banks. They also found that CAMEL model also could be used as a failure predicting tool.

Cole *et al.* (**1995**) conducted a study on "A CAMEL Rating's Shelf Life" and found that if a bank has not been examined for more than two quarters, off-site monitoring systems usually provide a more accurate indicator of bank's survival than CAMEL rating.

Rao and Datta (1998) studied the performance of all nationalized banks and found Corporation Bank to be the Best Performing Bank and banks like UCO Bank, Syndicate Bank and Vijaya Bank to be the worst performing banks.

Gaytan and Johnson (2002) found CAMEL model to be a good indicator of the performance of the banks.

Said and **Saucier** (**2003**) examined the liquidity, solvency and efficiency of Japanese Banks using CAMEL rating methodology, for a representative sample of Japanese banks for the period 1993- 1999, they evaluated capital adequacy, assets and management quality, earnings ability and liquidity position.

Prasuna (**2003**) analyzed the performance of 65 Indian banks for the period 2003-04. by adopting the CAMEL Model. He concluded that the competition was tough and consumers benefited from better services quality, innovative products and better bargains.

Sathish (2005) studied performance 55 banks for the year 2004-05 using CAMEL model. They found the Indian banking system to be healthy. They suggested that banks should use Information Technology to drive the growth of in the future.

Bernanke (2007) studied the banking system in US. They suggested that US Federal Reserve should use both onsite and off site monitoring for measuring the safety and soundness of financial systems. They suggested the use of CAMEL approach for offsite monitoring.

Grier (2007) found management to be the most important element in the CAMEL rating system because it plays a major role in bank's success.

Gupta and **Kaur** (**2008**) conducted the study with the main objective to assess the performance of Indian Private Sector Banks on the basis of Camel Model and gave rating to top five and bottom five banks. They ranked 20 old and 10 new private sector banks on the basis of CAMEL model. They considered the financial data for the period of five years from 2003-07.

Muhammad (2009) asserts that the strength of CAMEL's factors determines the overall strength of the bank. He suggests that quality of each component of CAMEL further underlines the inner strength and indicates as to extent to which a bank can protect itself against the market risks.

Ghosh (2010) studied the relationship between credit growth bank soundness and financial fragility in Indian banks. The soundness of banks was measured by their distance to default. Loan growth was found to be directly associated with soundness. They also found high correlation between growth in the private sector credit and bank soundness.

Sangmi and Nazir (2010) evaluated the financial performance of the two major banks , namely Punjab National Bank and Kammu & Kashmir Bank using CAMEL approach. The study throws light on the financial position of the banks under study and found the performance to be satisfactory in terms of all the CAMEL parameters.

Reddy and Prasad (2011) applied the 'CAMEL' approach to Rural Regional banks in India. They applied hypothesis testing along with t-statistic to distinguish between two classes of these banks.

Prasad and Ravinder (2012) examined the economic sustainability of a sample of thirty nine banks in India using CAMEL model during the period 2006-10. The study found that Canara Bank stood at top position in terms of capital adequacy. In terms of asset quality, Andhra Bank& Bank of Baroda was at top most position. In terms of management efficiency, Punjab & Sindh bank was the best performer. In terms of earnings quality Indian Bank sustained the top position. Bank of Baroda was the best performer in terms of liquidity position. On the basis of overall performance, Andhra Bank was ranked the best followed by Bank of Baroda, Punjab & Sindh Bank, Indian bank , Corporation Bank

3. DATA ANALYSIS AND INTERPETATIONS

3.1 CAPITALADEQUACY

The capital adequacy reflects the overall financial condition of a bank and also the ability of the management to meet the need for additional capital. This ratio is used to protect depositors and promote the stability and efficiency of financial systems around the world.

Two types of capital are measured: Tier One capital, which can absorb losses without a bank being required to cease trading, and Tier Two capital, which can absorb losses in the event of a winding, provides a lesser degree of protection to depositors.

Capital Adequacy Ratio - It is the arrived at by dividing the sum of tier I and tier II (capital fund of the bank) by risk weighted assets as per the given formula Tier I capital include equity capital and free reserves . Tier II capital comprises subordinated debt of 5-7 year tenure. The higher the CAR, the stronger the bank

3.1.1 CAPITAL ADEQUACY RATIO (CAR)

Capital adequacy ratios (CARs) are a measure of the amount of a bank's core capital expressed as a percentage of its risk-weighted asset and it is also known as "Capital to Risk Weighted Assets Ratio (CAR)."

CAR = (Tier I Capital +Tier II Capital)/ Risk Weighted Assets

Capital Adequacy Ratio is defined as:

TIER 1 CAPITAL = (paid up capital + statutory reserves + disclosed free reserves)

subsidiary + intangible assets + current & b/f losses)

TIER 2 CAPITAL = A) Undisclosed Reserves + B) General Loss reserves + C) hybrid debt capital instruments and subordinated debts where Risk can either be weighted assets or the respective national regulator's minimum total capital requirement.

Capital Adequacy Ratio comparison of various banks is given below:

TABLE 1: SHOWING CAPITAL ADEQUACY RATIO

Years	HDFC	ICICI	AXIS	KOTAK	INDUS IND
2004	11.16	10.40	11.21	15.25	12.75
2005	12.16	11.80	12.66	12.8	11.62
2006	11.41	13.40	11.08	11.27	10.54
2007	13.08	11.69	11.57	13.46	12.54
2008	13.60	13.96	13.73	18.7	11.91
2009	15.69	15.53	13.69	20.0	12.55
2010	17.44	19.41	15.80	18.4	15.33
2011	16.22	19.54	12.65	19.9	15.89
2012	16.52	18.52	13.66	17.5	13.85
2013	18.34	18.74	17.00	16.0	15.36
AVERAGE	14.562	15.299	13.305	16.32	13.234
RANK	3	2	4	1	5

The average capital adequacy ratio is highest (16.32%) in axis bank so it is being ranked as 1 and lowest (13.324%) in axis bank so it is ranked as 5.

3.1.2 TOTAL ASSETS TURN OVER RATIO

This ratio indicates the efficiency with which the banks is utilizing in fixed assets such as plant & machinery, land & building etc…

TABLE 2: SHOWING TOTAL ASSETS TURNOVER RATIO

YEARS	HDFC	ICICI	AXIS	KOTAK MAHINDRA	INDUSIND BANK
2004	0.08	0.10	0.10	0.08	0.10
2005	0.08	0.08	0.07	0.09	0.08
2006	0.09	0.08	0.08	0.11	0.07
2007	0.10	0.10	0.09	0.11	0.08
2008	0.11	0.11	0.10	0.12	0.09
2009	0.13	0.10	0.11	0.11	0.11
2010	0.10	0.09	0.09	0.11	0.10
2011	0.08	0.07	0.07	0.09	0.10
2012	0.09	0.07	0.08	0.11	0.12
2013	0.10	0.08	0.09	0.11	0.11
AVERAGE	0.096	0.088	0.88	0.104	0.096
RANK	3	4	5	1	2

Total assets turnover ratio is highest in KOTAK MAHINDRA bank rank-1 and lowest in AXIS bank rank -5.

3.1.3 TIER –I CAPITAL ADEQUACY RATIO

The Basel rules recognize that different types of equity are more important than others and to recognize i.e.,Tier I Capital and Tier II Capital. Tier I Capital is actual contributed from equity plus retained earnings. The minimum CAR ratios as per Basel Accord norms: Tier I equity to risk weighted asset is 4 per cent, while minimum CAR including Tier II Capital is 8 per cent.

TABLE 3: SHOWING TIER -1 CAPITAL ADEQUACY RATIO

YEARS	HDFC	ICICI	AXIS	KOTAK MAHINDRA	INDUSIND
2004	8.03	6.09	6.44	12.64	8.28
2005	9.60	7.59	8.87	13.64	9.09
2006	8.55	9.20	7.26	16.28	12.33
2007	8.58	7.42	6.42	15.17	11.05
2008	10.30	11.32	10.17	14.50	10.64
2009	10.58	12.16	9.26	16.10	9.63
2010	13.26	13.48	11.18	15.40	12.13
2011	12.23	11.8	9.41	18.0	12.29
2012	11.60	11.10	9.45	15.7	11.37
2013	8.03	12.80	12.23	14.71	13.78
AVERAGE	10.07	10.29	9.06	15.21	9.83
RANK	3	2	5	1	4

Tier 1 capital adequacy ratio is highest for Kotak Mahindra Bank (Rank - 1) and lowest for Axis Bank (Rank - 5).

3.2 ASSET QUALITY

A review or evaluation assessing the credit risk associated with a particular asset. These assets usually require interest payments - such as a loans and investment portfolios. How effective management is in controlling and monitoring credit risk can also have an effect on the what kind of credit rating is given.

3.2.1 GROSS NPA'S TO TOTAL ADVANCES

The prime motto behind measuring the asset quality is to ascertain the components of non performing assets as a percentage of the total assets.

TABLE 4: SHOWING GROSS NPA'S TO TOTAL ADVANCES

YEARS	ICICI	HDFC	AXIS	KOTAK	INDUSIND
2004	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA
2006	0.63	1.53	1.7	0.67	0.62
2007	0.73	4.10	1.1	1.02	1.25
2008	2.45	3.45	1.6	1.75	1.45
2009	4.32	1.98	1.08	4.31	1.61
2010	6.52	1.44	1.39	3.62	1.23
2011	5.80	1.06	1.28	2.03	1.01
2012	4.83	0.95	1.18	1.56	0.98
2013	3.22	0.85	1.19	1.55	1.03
AVERAGE	2.85	1.53	1.05	1.65	0.918
RANKS	1	3	4	2	5

Gross NPA to total advances is highest (2.85%) ICICI Bank (Rank-1) and lowest (0.918%) in IndusInd Bank (Rank -5).

3.2.2 PERCENTAGE CHANGE IN NPAs

This measure gives the movement in net NPAs in relation to net NPAS in the previous year. The lower the percentage change, better the quality of assets. It is given by following formula:-

% Change in Net NPAS= (Net NPAs at the Beginning of Year – Net NPAs at the End of Year) / Net NPAs at the Beginning of the Year.

TABLE 5: SHOWING PERCENTAGE CHANGE IN NPAs

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA
2006	30.74	-30.06	21.15	0.067	45.89
2007	155.94	89.23	1.374	1345.3	36.07
2008	121.54	64.35	0.54	154.64	38.45
2009	50.64	35.09	45.09	135.20	34.05
2010	35.64	12.04	6.45	43.50	24.76
2011	25.63	31.64	12.64	34.67	22.74
2012	14.54	25.45	11.05	24.89	29.27
2013	11.25	10.75	19.73	21.63	12.50
AVERAGE	44.59	22.64	11.80	175.97	24.37
RANKS	2	4	5	1	3

Percentage change in NPAS is highest in Kotak Mahindra Bank (Rank – 1) and lowest in Axis Bank (Rank – 5)

3.2.3 PRIORITY SECTOR ADVANCES AS A % OF TOTAL ADVANCES

The Reserve bank of India on the basis recommendations made by working group and committees has been issuing guidelines to commercial banks from time to time for grant of loans and advances to various categories of priority sector viz, agriculture, small industries, roads and water transport operators, retail trade, small business, professional ,& self employed persons, educational and housing loans, consumption loans to weaker sections etc.

TABLE 6: SHOWING PRORITY SECTOR TO ADVANCES

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	14.08	23.7	26.23	40.92	36.14
2005	21.97	22.57	28.22	33.31	39.18
2006	30.99	29.2	34.64	35.58	31.89
2007	37.67	28.22	35.79	32.02	32.02
2008	33.78	27.64	34.01	33.8	33.31
2009	30.11	32.08	29.06	31.98	34.92
2010	35.09	33.23	31.53	29.33	29.3
2011	34.89	39.45	30.29	28.76	28.22
2012	36.40	35.67	33.69	32.63	22.57
2013	43.07	40.09	39.09	30.45	29.54
AVERAGE	31.80	31.18	32.25	32.87	31.70
RANKS	4	5	2	1	3

Priority sector to total advances is highest in Kotak Mahindra Bank (Rank-1) and lowest in ICICI Bank (Rank - 5).

3.3 MANAGEMENT

This study uses ratios like Return on Net Worth, Credit Deposit Ratio, Profit per Employees, Net Profit Margin for measuring the efficiency of the management;

3.3.1 RETURN ON NET WORTH

Return on shareholders' investment, popularly known as return on investment or return on shareholders' funds is the relationship between net profits and the proprietors' funds. This ratio is one of the most important ratios used for measuring the overall efficiency of a bank.

Return on Net Worth = Net Profit / Net Worth

TABLE 7: SHOWING RETURN ON NET WORTH

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	24.38	20.93	26.39	13.72	34.20
2005	23.67	18.86	18.19	12.45	25.79
2006	22.73	14.33	18.28	14.58	4.34
2007	23.57	13.17	19.37	11.19	7.10
2008	13.83	8.94	12.12	8.17	6.76
2009	15.32	7.58	17.17	7.06	10.39
2010	13.70	7.79	15.67	12.35	16.19
2011	15.47	9.35	17.83	12.03	15.12
2012	17.26	10.70	18.59	13.65	17.79
2013	18.57	12.48	15.64	14.40	13.92
AVERAGE	18.85	12.41	17.92	11.96	15.16
RANKS	1	4	2	5	3

Average Return on Net Worth is highest (18.85%) in HDFC Bank (Rank – 1) and lowest (11.96%) in Kotak Mahindra bank (Rank - 5).

3.3.2 CREDIT DEPOIST RATIO

This ratio measures the efficiency of the management in converting the deposit available with the bank (excluding other funds like equity capital etc).

TABLE 8: SHOWING CREDIT DEPOSIT RATIO

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	55.89	97.38	43.63	70.77	66.47
2005	64.87	89.17	47.40	69.81	69.14
2006	65.79	87.59	52.79	95.40	65.11
2007	66.08	83.83	59.85	98.33	62.46
2008	65.28	84.99	65.94	96.55	65.10
2009	66.64	91.44	68.89	100.34	69.42
2010	72.44	90.04	71.87	94.61	74.40
2011	33.47	39.85	31.57	39.09	76.49
2012	NA	NA	NA	NA	79.80
2013	NA	NA	NA	NA	36.34
AVERAGE	49.04	58.43	44.19	66.49	66.47
RANKS	4	3	5	1	2

Total Credit Deposit ratio is highest in Kotak Mahindra Bank (Rank – 1) and lowest (11.96%) in Axis bank (Rank - 5).

3.3.3 NET PROFIT MARGIN

Net profit is obtained when interest is expanded; operating expenses and taxes are deducted from total income. This ratio establishes relationship between profit and total income. It indicates management efficiency.

Net Profit Ratio = (Net Profit / Total Income) * 100

TABLE 9: SHOWING NET PROFIT RATIO

YEAR	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	16.81	13.67	13.14	20.57	19.87
2005	17.77	16.32	14.33	15.35	16.98
2006	15.55	14.12	13.47	12.97	2.85
2007	13.57	10.81	12.01	8.84	3.79
2008	12.82	10.51	12.22	10.37	3.45
2009	11.35	9.74	13.31	8.35	5.29
2010	14.76	12.17	16.10	15.23	10.63
2011	16.18	15.79	17.12	16.46	13.43
2012	15.88	15.75	15.47	15.15	12.59
2013	16.04	17.19	15.35	14.78	12.71
AVERAGE	15.07	13.60	14.25	13.80	10.15
RANKS	1	4	2	3	5

NET PROFIT Ratio is highest (15.07%) in HDFC Bank (Rank – 1) and lowest (10.15%) in Indusind Bank (Rank -5).

3.3.4 NET PROFIT PER EMPLOYEE

This measures the efficiency of the employee at the branch level. It also gives valuable input to assess the real strength of a bank branch network. It is arrived at by dividing the net profit earned by the bank by total number of branches. The higher the ratio, higher the efficiency of management.

TABLE 10: SHOWING NET PROFIT PER EMPLOYEE

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	9,40,347	12,05,307	7,91,634	7,00,244	NA
2005	7,36,822	11,15,158	6,85,089	4,01,407	4,41,454
2006	5,85,099	9,97,854	7,42,840	3,27,654	3,74,596
2007	5,31,964	8,98,832	6,63,265	3,43,455	3,34,554
2008	3,98,950	7,86,425	7,59,648	2,61,600	3,98,810
2009	9,73,906	NA	8,84,192	1,53,235	4,20,998
2010	7,81,992	9,47,323	11,63,772	2,82,025	7,13,927
2011	7,04,261	9,04,242	12,81,819	3,99,113	82,78,788
2012	5,67,506	11,09,420	13,36,633	4,93,205	8,55,944
2013	4,25,294	13,41,412	1,36,65,669	5,79,028	9,22,607
AVERAGE	6,64,614	21,37,867	21,97,456	3,84,106	12,40,722
RANKS	4	2	1	5	3

Average Net Profit Per Employee is highest in Axis Bank (Rank - 1) and lowest in Kotak Mahindra Bank (Rank – 5).

4. EARNINGS ABILITY / PROFITABILITY RATIOS

Profitability ratio is the common ratio required to judge the profitability of commercial banks. This ratio measures the profitability or the operational efficiency of the banks. Employing more resources and making effective utilization of resources can increase absolute profits.

4.1 DIVIDEND PER SHARE (DPS)

Dividend per share indicates the return earned per share. It is bit different from return on equity capital. It is calculated by dividing dividend on equity share capital by the total number of equity shares.

Dividend Per Share = Dividend On Equity Share Capital / No. Of Equity Share

TABLE 11: SHOWING DIVIDEND PER SHARE

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	3.50	7.50	2.50	2.40	2.25
2005	4.50	8.50	2.80	1.25	1.80
2006	5.50	8.50	3.50	0.60	-----
2007	7.00	10.00	4.50	0.70	0.60
2008	8.50	11.00	6.00	0.75	0.60
2009	10.00	11.00	10.00	0.75	1.20
2010	12.00	12.00	12.00	0.85	1.80
2011	16.50	14.00	14.00	0.50	2.00
2012	4.30	16.50	16.00	0.60	2.20
2013	5.50	20.00	18.00	0.70	3.00
AVERAGE	7.73	11.9	8.93	0.91	1.545
RANKS	3	1	2	5	4

Dividend Per Share is highest (11.9%) in ICICI Bank (Rank - 1) and lowest (0.91%) in KOTAK MAHINDRA Bank (Rank - 5).

4.2 NET INTEREST INCOME TOTOTAL FUNDS

Net interest income is the difference between interest received from asset and interest paid on liabilities.

Net Interest Income = Interest Received – Interest Paid

TABLE 12: SHOWING NET INTEREST INCOME TO TOTAL FUND

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	4.48	3.88	5.00	5.35	4.81
2005	5.14	3.60	3.57	5.62	3.12
2006	5.82	3.78	4.08	6.84	2.16
2007	6.22	4.06	4.01	5.93	1.74
2008	6.66	4.29	4.74	6.27	1.96
2009	6.86	3.99	4.98	6.02	3.16
2010	6.00	4.08	5.34	6.83	4.09
2011	4.22	2.34	3.10	4.75	4.53
2012	4.00	2.40	3.04	4.31	4.45
2013	4.28	2.70	3.09	4.29	3.48
AVERAGE	5.36	3.51	4.09	5.62	3.35
RANKS	3	4	2	1	5

Net interest income to total funds is highest (5.62%)in Kotak Mahindra Bank (Rank - 1) and lowest(3.35%) in IndusInd Bank (Rank - 5).

4.3 EARNINGS PER SHARE

Earnings per share indicate the return earned per share. It is calculated by dividing the net profit after taxes minus preference dividend by the total number of equity shares. It is a good measure of profitability and when compared with EPS similar other banks, it gives a view of the comparative earnings or earning power of a bank.

Earnings Per Share = Profit After Tax - Preference Dividend / No. Of Equity Shares

TABLE 13: SHOWING EARNINGS PER SHARE

YEAR	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	21.16	26.71	11.72	13.22	10.50
2005	27.16	27.22	11.83	6.88	7.24
2006	35.64	28.55	17.41	3.82	1.27
2007	43.29	34.59	23.40	4.33	2.13
2008	44.87	37.37	29.94	8.53	2.35
2009	52.77	33.76	50.57	7.99	4.18
2010	64.42	36.10	62.06	16.12	8.53
2011	84.40	44.73	82.54	11.10	12.39
2012	22.02	56.09	102.67	14.65	17.17
2013	28.27	72.22	110.68	18.23	20.30
AVERAGE	42.4	39.73	50.28	9.37	8.60
RANKS	2	3	1	4	5

Earnings Per Share is highest (50.28%) in AXIS Bank rank-1 and lowest(39.73%) in IndusInd Bank (Rank -5).

4.4 OPERATING PROFIT PER SHARE

The profit earned from bank's normal core business operations. This value does not include any profit earned from the bank's investments (such as earnings from banks in which the bank has partial interest) and the effects of taxes and provisions.

Operating Profit Ratio = (Operating Profit / Total Income) * 100

TABLE 14: SHOWING OPERATING PROFIT PER SHARE

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	31.48	34.06	21.30	14.19	11.80
2005	41.65	36.37	22.49	10.53	9.76
2006	52.56	36.75	34.12	6.51	2.55
2007	86.19	42.19	42.36	7.10	-0.95
2008	107.32	51.29	56.88	16.32	0.24
2009	92.36	48.58	83.56	13.08	4.77
2010	106.25	49.80	97.29	25.88	11.13
2011	83.56	25.03	50.50	8.72	15.33
2012	18.11	25.38	56.94	10.73	18.76
2013	21.97	46.32	66.33	15.11	10.52
AVERAGE	64.14	39.57	45.17	12.81	8.39
RANKS	1	3	2	4	5

Operating profit per employee is highest (64.14%)in HDFC bank rank-1 and lowest(8.39%) in INDUSIND bank rank -5.

4.5 OPERATING INCOME AS A % OF WORKING FUNDS

This is arrived at by dividing the operating profit by average working funds. Working funds is the daily average of the total assets during the year. Which indicate how much operating income is generated from average working funds. Higher ratio indicates good performance of the bank.

TABLE 15: SHOWING OPERATING INCOME AS A% OF WORKING FUND

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	16.73	18.95	22.59	15.77	NA
2005	14.56	13.33	14.73	13.47	11.71
2006	15.87	12.24	16.1	14.33	12.88
2007	17.68	15.08	14.81	14.57	14.39
2008	18.8	16.73	13.45	16.78	15.77
2009	19.99	18.38	16.61	19.62	16.79
2010	15.86	19.21	14.76	17.59	15.08
2011	NA	NA	NA	NA	15.42
2012	NA	NA	NA	NA	16.94
2013	NA	NA	NA	NA	NA
AVERAGE	11.94	11.39	11.30	11.21	11.89
RANKS	1	3	4	5	2

Average operating income as a % of working fund is highest (11.94%) in HDFC Bank (Rank - 1) and lowest (11.21%) in Kotak Mahindra Bank (Rank - 5).

5. LIQUIDITY RATIO

Liquidity ratios examine the bank's short-term solvency and its ability to pay-off the liabilities. If a bank does not have sufficient liquidity, it may not be in a position to meet its commitments and thereby may lose its credit worthiness.

5.1 CURRENT RATIO

Current ratio may be defined as the relationship between current assets and current liabilities. Current assets include cash in hand, balance with RBI, balance with other bank money at call and short notice and stock. Current liabilities include short-term borrowings, short-term deposits, bills payables, bank over draft and outstanding expenses. It is calculated by dividing the total current assets by total current liabilities.

Current Ratio = Current Assets / Current Liabilities

TABLE 16: SHOWING LIQUIDITY RATIO

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	0.03	0.11	0.04	0.02	0.06
2005	0.03	0.09	0.06	0.03	0.08
2006	0.04	0.08	0.04	0.04	0.07
2007	0.04	0.09	0.03	0.05	0.05
2008	0.04	0.11	0.03	0.06	0.05
2009	0.04	0.13	0.03	0.09	0.05
2010	0.03	0.14	0.03	0.05	0.04
2011	0.73	0.96	0.74	0.95	0.04
2012	0.76	1.00	0.77	1.00	0.04
2013	0.78	0.98	0.77	0.94	0.82
AVERAGE	0.252	0.369	0.254	0.323	0.13
RANKS	4	1	3	2	5

Liquid ratio is highest (0.369%) in ICICI bank rank-1 and lowest (0.13%) in INDUSIND bank rank -5. AXIS bank comes in the middle of the periphery. The table depict that there is a wide disparity between the operating income of 2004 to 2013. NA indicates that NO AVAILABLE of data.

5.2 QUICK RATIO

It is defined as the relationship between quick or liquid assets and current or liquid liabilities. Liquid assets include cash in hand, balance with RBI, balance with other banks (both in India and abroad) and money at call and short notice. Current liabilities include short-term borrowings, short-term deposits, bills payables and outstanding expenses.

Quick Ratio=Quick Assets / Current Liabilities

TABLE 17: SHOWING QUICK RATIOS

YEARS	HDFC	ICICI	AXIS	KOTAK	INDUSIND
2004	3.39	4.18	9.17	9.59	12.76
2005	5.61	4.98	11.55	9.36	10.03
2006	5.18	6.64	6.52	6.20	9.05
2007	4.07	6.04	7.39	5.74	8.02
2008	4.89	6.42	9.23	5.83	8.63
2009	5.23	5.94	9.52	5.91	9.16
2010	7.14	14.70	19.19	8.46	17.94
2011	6.89	15.86	19.60	10.86	17.65
2012	6.20	9.37	21.63	16.85	21.94
2013	7.84	10.53	20.10	18.95	23.48
AVERAGE	5.64	8.466	13.39	9.77	13.86
RANKS	5	4	2	3	1

Quick ratio is highest (13.86%) in INDUSIND Bank (Rank - 1) and lowest (5.64%) in HDFC Bank (Rank – 5).

6. CONCLUSIONS

6.1 GROUP RANKING

For group ranking, group has been computed by adding the ranks of individual ratio's in the group and dividing it by the number of ratios in that group. After computing the group average , group ranking has been done accordingly.

CAPITAL ADEQUACY

TABLE 18: SHOWING GROUP RANKING CAPITAL ADEQUACY

BANKS	CAR RATIO	ASSETS T/O RATIO	TIER-1 CAR	GROUP AVERAGE	RANKS
HDFC	3	3	3	3	3
ICICI	2	4	2	2.67	2
AXIS BANK	4	5	5	4.67	5
KOTAK MAHINDRA	1	1	1	1	1
INDUSIND BANK	5	2	4	3.67	4

ASSET QUALITY

TABLE 19: SHOWING GROUP RANKING ASSET QUALITY

BANKS	GROSS NPAS TO GROSS ADVANCES	PERCENTAGE CHANGE IN NPA'S	PRORITY SECTOR ADVANCES	GROUP AVERAGE	RANKS
HDFC	3	2	4	3	2
ICICI	1	4	5	3.33	3
AXIS	4	5	2	3.66	4
KOTAK MAHINDRA	2	1	1	1.33	1
INDUSIND	5	3	3	3.67	4

MANAGEMENT

TABLE 20: SHOWING GROUP RANKING MANAGEMENT

BANKS	RETURN ON NET WORTH	CREDIT DEPOSIT RATE	NET PROFIT MARGIN	NET PROFIT PER EMPLOYEE	GROUP AVERAGE	RANKS
HDFC	1	4	1	4	2.5	1
ICICI	4	3	4	2	3.25	3
AXIS	2	5	2	1	2.5	1
KOTAK MAHINDRA	5	1	3	5	3.5	5
INDUSIND	3	2	5	3	3.25	3

EARNINGS QUALITY

TABLE 21: SHOWING GROUP RANKING EARNINGS QUALITY

BANKS	DIVIDEND PER SHARE	NET INTEREST INCOME TO	EARNINGS PER SHARE	OPERATING PROFIT PER	Operating income as a % of working funds	GROUP AVERAGE	RANKS
HDFC	3	3	2	1	1	2	1
ICICI	1	4	3	3	3	2.8	3
AXIS	2	2	1	2	4	2.2	2
INDUSIND	4	5	5	5	2	4.2	5

LIQUIDITY

TABLE 22: SHOWING GROUP RANKING LIQUIDITY

BANKS	CURRENT RATIO	QUICK RATIO	GROUP AVERAGE	RANKS
HDFC	4	5	4.5	5
ICICI	1	4	2.5	1
AXIS	3	2	2.5	1
KOTAK MAHINDRA	2	3	2.5	1
INDUSIND	5	1	3	4

6.2 COMPOSITE RANKING

Composite ranking reveals the comparative position of the banks as a whole. It has been computed by using following procedure:
Computation of composite average= group average (capital adequacy + Asset quality + management+ earnings quality+ liquidity) no of groups(5).

TABLE 23: SHOWING COMPOSITE RATIO

BANKS	CAPITAL ~ ADEQUACY	ASSET QUALITY	MANAGEMENT	EARNINGS QUALITY	LIQUIDITY	COMPOSITE AVERAGE	COMPOSITE RANK
HDFC	3	3	2.5	2	4.5	3	3
ICICI	2.67	3.33	3.25	2.8	2.5	2.91	2
AXIS	4.67	3.67	2.5	2.2	2.5	3.10	4
KOTAK MAHINDRA	1	1.33	3.5	3.8	2.5	2.42	1
INDUSIND	3.67	3.67	3.25	4.2	3	3.55	5

6.3 ANALYSIS OF VARIANCE (ANOVA)

The Analysis Of Variance, popularly known as the ANOVA, can be used in cases where there are more than two groups. ANOVA compares between the means of two or more samples.
In ANOVA, the total variation is subdivided into variation that is due to differences among the groups and variation that is due to differences within the groups. **Within the variation** measures random variation. **Among the variation** is due to differences from group to group.
SST = SSA + SSW
H_o : $\mu 1 = \mu 2 = \mu 3 = \ldots = \mu 6$
is tested against the alternative that not all the C population means are equal:
H_1 : Not all the μj are equal (where j = 1,2,3,.....C)
To perform ANOVA test of equality of population means, subdivide the total variation in the values into two parts - that which is due to variation among the groups and that which is due to variation within the groups.
The **F_{STAT}** test static follows an F distribution, with C - 1 degree of freedom in the numerator and n - c degree of freedom in the denominator. For a given level of significance, **α,** we reject the null hypothesis if the **F_{STAT}** test static is greater than the upper tail critical value, F α, from the F distribution having c - 1 degrees of freedom in the numerator and n - c in the denominator. Thus the decision rule is : Reject **Ho** if **$F_{STAT} > F$** α ;otherwise, do not reject **Ho**
Calculations: Following table represents the Z-Score results of 5 private banks.

TABLE 24: SHOWING Z SCORES

BANKS / RATIOS	HDFC	ICICI	AXIS	KOTAK MAHINDRA	INDUSIND
C	3	2.67	4.67	1	3.67
A	3	3.33	3.66	1.33	3.67
M	2.5	3.25	2.5	3.5	3.25
E	2	2.8	2.2	3.8	4.2
L	4.5	2.5	2.5	2.5	3
MEAN	3	2.91	3.11	2.43	3.59
	$\mu 1$	$\mu 2$	$\mu 3$	$\mu 4$	$\mu 5$

In the above table we observed that there are differences in the sample means for the five banks. For HDFC, the mean value is 3. For ICICI , the mean value is 2.91. For axis bank, the mean value is 3.11. For KOTAK MAHINDRA, the mean value is 2.43., for the IndusInd bank mean value is3.59. What we need to determine is whether these sample results are sufficiently different to conclude that the population means are not all equal.
The Null hypothesis sates that there is no significance in Z-Score values among the five banks;
Ho : $\mu 1 = \mu 2 = \mu 3 = \mu 4 = \mu 5$
The alternative hypothesis states that at least one of the banks differs with respect to the Z-Score values;
H_1 : Not all means are equal.
To construct the ANOVA summary table, we first compute the sample means in each group. Then we compute the grand mean by summing all 25 values and dividing by the total no. of values.

$\bar{\bar{X}}$ = $(\mu 1 + \mu 2 + \mu 3 + \mu 4 + \mu 5) / n$ = 3+2.91+3.11+2.43+3.59÷ 5 = 3.00

Then, using the equations of SSA, SSW, SST, MSA, MSW and $F_{STAT,}$ we compute the sum of squares
SSA = $5(3-3)^2+5(2.91-3)^2+5(3.11-3)^2+5(2.43-3)^2+5(3.59-3)^2$ = 3.466
SSW = $(3-3)^2+ (3-3)^2+ (2.5-3)^2+ (2-3)^2+ (4.5-3) +....+ + (3.25-3.59)^2 + (4.2-3.59)^2 + (3-3.59)$ =15.4684
SST = $(3-3)^2 + (3-3)^2 + (2.5-3)^2 + (2-3)^2 + ...+(3.25-3)^2 + (4.2-3)^2+(3-3)^2$ = 18.764
We compute the mean square terms by dividing the sum of squares by the corresponding degrees of freedom. (C = 5, n = 25)
Mean Square Among Groups (M S A) = SSA÷C-1= 3.466÷5-1 =0.8665
Mean Square With In Groups (MSW) = SSW÷N-C=15.4684÷(25-5) = 0.77342
F- TEST = MSA ÷MSW= 0.8665÷ 0.77342= 1.12034
For a selected level of significance, α, we find the upper-tail critical value, F_α, from the distribution. F_α the upper-tail critical value at the 0.05 level of significance, is 5.17.
Hence**, α = 0.05, F_α = 3.51, F_{STAT} = 1.12034**

Conclusion : Since, **F_{STAT} = 1.12034 is less than F_{α} = 3. 51,** so we "Accept the Null hypothesis and accept the Alternative hypothesis". We conclude that there is no a significant difference in the Mean values among the 5 banks.

ANOVA summary Table

Following table shows the Microsoft Excel ANOVA summary table and *p* - value.

TABLE 25: SHOWING EXCEL ANNOVA TABLE

Anova: Single Factor						
SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Column 1	5	15	3	0.875		
Column 2	5	14.55	2.91	0.13245		
Column 3	5	15.53	3.106	1.07708		
Column 4	5	12.13	2.426	1.57038		
Column 5	5	17.79	3.558	0.21087		
ANOVA						
Source of Variation	*SS*	*Df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.30088	4	0.82522	1.06734	0.39856	2.866081
Within Groups	15.46312	20	0.773156			
Total	18.764	24				

Conclusion: The *p* - value, or probability of getting a computed **F-** value 1.06734 < F crit value2.866081 so, we accept the null hypothesis.

6.4 LEVENE TEST FOR HOMOGENEITY OF VARIANCE

Although the one way ANOVA - *F* test is relatively robust with respect to the assumptions of equal group variances, large differences in the group variances can seriously affect the level of significance and the power of the *F* test. One procedure for testing the equality of the variances with high statistical power is the modified Levene test.

To test the null hypothesis of equal variances, we first compute the absolute value of the difference between each value and the median of the group. Then we perform a one way ANOVA on these absolute differences. Most statisticians suggest using a level of significance of **α = 0.05** when performing the ANOVA

MEDIAN

Following table summarizes the absolute differences from the median of each company:

TABLE 26: SHOWING EXCEL LEVENE CALCULATION

BANK/ RATIO	HDFC	ICICI	AXIS	KOTAK	INDUSIND
C	2	2.5	2.2	1	3
A	2.5	2.67	2.5	1.33	3.25
M	3	2.8	2.5	2.5	3.67
E	3	3.25	3.66	3.5	3.67
L	4.5	3.33	4.67	3.8	4.2

Anova: Single Factor						
SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Column 1	5	3	0.6	0.425		
Column 2	5	1.41	0.282	0.04817		
Column 3	5	3.63	0.726	0.87728		
Column 4	5	4.97	0.994	0.34218		
Column 5	5	1.62	0.324	0.09533		
ANOVA						
Source of Variation	*SS*	*Df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.736584	4	0.434146	1.214082	0.335974	2.866081
Within Groups	7.15184	20	0.357592			
Total	8.888424	24				

Conclusion: From the above table, observed that **F_{STAT} = 1.214 < F crit = 2.866** so we accept Ho. There is no evidence of a significant difference.

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