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A STUDY ON ASSETS LIABILITY MANAGEMENT OF SELECTED PUBLIC SECTOR BANKS

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Abstract

Assets Liability Management is a dynamic and vital tool used by the Indian banks for measuring, controlling, managing and improving the practices of risk management which is an important dimension of ALM. Banks are exposed to different risks in the course of their business and these risks may cause imbalance in assets and liability due to volatility in interest rate and liquidity risk and hence ALM provide a tool to balance the negativity of liability over assets which may open up the opportunity to intensify the net worth of banks. This paper attempts to assess the impact of ALM on the profitability of banks by using the technique of ratio analysis.

Key Words: Assets Liability Management, Maturity Bucket**,** Liquidity Risk

1. OBJECTIVES OF THE STUDY

- To study the management of assets and liabilities of selected banks.
- To evaluate the impact of Asset Liability Management on profitability of banks.
- To evaluate activity of Asset Liability Management in Indian banks by using Ratio analysis.

2. HYPOTHESIS OF THE STUDY

H0: There would be no significant difference in the Interest Spread Ratio of the selected public sector banks during the study period of five years

H0: There would be no significant difference in the Net Profit Margin Ratio of the selected public sector banks during the study period of five years

H0: There would be no significant difference in the Return on Net worth Ratio of the selected public sector banks during the study period of five years

H0: There would be no significant difference in the Capital Adequacy Fund Ratio of the selected public sector banks during the study period of five years

H0: There would be no significant difference in the Total Debt to Owners Fund Ratio of the selected public sector banks during the study period of five years

3. INTRODUCTION TO ALM

In the 1940s and the 1950s, there was an abundance of funds in banks in the form of demand and savings deposits. Hence, the focus then was mainly on assets management. But as the availability of low cost funds started to decline, liability management became the focus of bank management efforts. In 1980s, volatility of interest rate in USA and Europe caused the focus to broaden to include the issue of interest rate risk. ALM began to extend beyond the bank treasury to cover the loans and other depository functions. Banks started concentrating more on management of both side i.e. assets and liability side of the balance sheet.

With the recommendation of Narasimhan Committee II, The Reserve Bank of India introduced the concept of Assets-Liability management in India for the first time in 1998-99. RBI issued its first ALM guidelines in February 1999, which was effective from 1st April 1999. This guideline included that at least 60% of assets and liability to be covered initially. Later on it was increased to 100% coverage from the 1st April 2000. In September, 2007, keeping in view the international practices and sharp and better assessment for the efficiency of liquidity management with a view to developing money market, RBI troubleshoot the guidelines by splitting the time bucket in three parts.

4. INDUSTRY OVERVIEW

Banks are exposed to several major risks in the course of their business like, credit risk, interest rate risk, foreign exchange risk, equity/commodity price risk, liquidity risk and operational risk. It is, therefore, important that banks introduce effective risk management systems that address the issues related to interest rate, currency and liquidity risks. ALM is a tool to manage imbalance between the assets and liability arising due to the changes in interest rates and liquidity of the said banks and other commercial institutions. This approach identifies the gap between the assets and liability arising on account of changes in the Interest rates over the time buckets.

5. LITERATURE REVIEW

R. Umarani, J. Mahaswamy(2015) in their study of **An Analysis of Assets-Liability Management in Indian Banks** has studied the Gap position and Cumulative Maturity Gap of SBI and their associate banks in different time buckets ranging from 1-14

days to over 5 years. This research paper shows that from the sampled banks which banks are facing the problem of liquidity deficiency and which banks are having excess liquidity over the selected time bucket. The finding of this study says that banks are divulged and evident to liquidity risk.

Karthigeyan, D. V.(2013) in his reseasrch **paper Asset-Liability Management In Indian Private Sector Banks-A Canonical Correlation Analysis** have studied the various risk associated with banks i.e. credit risk, liquidity risk, interest rate risk, operational risk, exchange risk, and regulatory risk. For the purpose of the study 3 old & new generation private banks were selected to examine the risk effectiveness. To examine the risk effectiveness of banks the Canonical correlation technique was applied to capture the predictor variables in the Banks.

Dash M, (2013) in his research paper **Impact of Bank Asset and Liability Management on Profitability** have examined the impact of ALM on the profitability of banks whilst ensuring protection against different kinds of risk prevailing. For which 35 public & private sector banks were taken as samples. This concludes that banks are evident to short-term risk with negative mismatch in 1-90 days time bucket.

6. RESEARCH METHODOLOGY

Type of research	Analytical
Study period	Five years from 2015 to 2019
Sources of data	Annual reports, Journals, Official websites
Statistical tools	Mean, standard deviation, Ratios, ANOVA
Sample selection criteria	Top 5 public sector banks

7. ANALYSIS OF DATA

In the present study data collected by the researcher has been decorously classified and compiled as per the need of the study and the technique of Analysis Of Variance (ANOVA) has been used for the purpose of analysis and drawing meaningful conclusion.

1. INTEREST SPREAD RATIO

TABLE NO: 7.1

INTEREST SPREAD RATIO OF SELECTED SAMPLES

Name of Samples	2019	2018	2017	2016	2015	Mean	SD
State Bank of India	6.65	6.36	6.01	6.26	5.76	6.20	0.34
Central Bank of India	9.53	11.78	7.55	7.21	6.93	8.60	2.04
Bank of India	6.27	5.99	6.30	5.20	5.07	5.76	0.59
Bank of Baroda	5.91	6.48	6.33	5.47	5.35	5.90	0.50
Canara Bank	5.64	6.21	6.79	6.43	6.30	6.27	0.42

The table no.7.1 shows the interest spread Ratio of the selected samples of Public sector banks during the study period of five years from 2015 to 2019. The table also shows the Average and Standard deviation of available data. Amongst the selected samples, in 2018 the Central Bank of India shows the highest interest spread ratio of 11.78 while on the other hand the lowest Interest Spread Ratio is observed for Bank of India i.e. 5.07 in 2015.

TABLE NO: 7.2

ANOVA TABLE- HYPOTHESIS TESTING FOR INTEREST SPREAD RATIO

Source of Variation	SS	Df	MS	F-Value	F crit
Between Samples	27.112	4	6.778	8.007	3.006
Between Years	6.817	4	1.704	2.013	3.006
Error	13.544	16	0.846		

Total	47.474	24			

The calculated value for ANOVA 'F-Test' is 8.007 which is higher than the Table value of 3.007. Hence, here Null hypothesis is rejected and Alternate hypothesis is accepted. It shows that there exists a significant difference in the Interest Spread Ratio between selected samples during the study period of five years.

2. NET PROFIT MARGIN RATIO

TABLE NO: 7.3

NET PROFIT MARGIN RATIO OF SELECTED SAMPLES

Name of Samples	2019	2018	2017	2016	2015	Mean	SD
State Bank of India	-2.96	5.97	6.06	5.59	7.98	4.52	4.28
Central Bank of India	-21.23	-9.89	-5.47	2.29	-5.16	-7.89	8.64
Bank of India	-15.87	-3.96	-14.56	3.93	7.19	-4.65	10.46
Bank of Baroda	-5.57	3.27	-12.24	7.91	11.66	1.01	9.81
Canara Bank	-10.23	2.71	-6.38	6.17	6.16	-0.31	7.55

The table no.7.3 shows the Net Profit Margin Ratio of the selected samples of Public sector banks during the study period of five years from 2015 to 2019. The table also shows the Average and Standard deviation of available data. Amongst the selected samples, in the year 2015 the Bank of Baroda shows the highest Net Profit Margin Ratio of 11.66 while on the other hand the lowest Net Profit Margin Ratio is observed for Central Bank of India i.e. -21.23 in the year 2019.

TABLE NO: 7.4

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ANOVA TABLE- HYPOTHESIS TESTING FOR NET PROFIT MARGIN RATIO

Source of Variation	SS	Df	MS	F	F crit
Between Samples	474.113	4	118.528	5.3948	3.006
Between Years	1072.501	4	268.125	12.203	3.006
Error	351.532	16	21.970		
Total	1898.148	24			

The calculated value for ANOVA 'F-Test' is 5.395 which is higher than the Table value of 3.007. Hence, here Null hypothesis is rejected and Alternate hypothesis is accepted. It shows that there exists a significant difference in the Net Profit Margin Ratio between selected samples during the study period of five years.

3. RETURN ON NET WORTH

TABLE NO: 7.5

RETURN ON NET WORTH OF SELECTED SAMPLES

Name of Samples	2019	2018	2017	2016	2015	Mean	SD
State Bank of India	-3.37	6.69	6.89	10.20	9.20	5.92	5.41
Central Bank of India	-28.38	-14.12	-9.85	3.87	-10.24	-11.74	11.53
Bank of India	-20.15	-5.06	-19.63	5.43	9.12	-6.06	13.66
Bank of Baroda	-5.60	3.43	-13.42	8.53	12.61	1.11	10.59
Canara Bank	-14.51	3.96	-10.75	10.21	10.10	-0.20	11.70

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The table no.7.5 shows the Return on Net worth Ratio of the selected samples of Public sector banks during the study period of five years from 2015 to 2019. The table also shows the Average and Standard deviation of available data. Amongst the selected samples, in the year 2015 the Bank of Baroda shows the highest Return on Net worth Ratio of 12.61 while on the other hand the lowest Return on Net worth Ratio is observed for Central Bank of India i.e. -28.38 in the year 2019.

TABLE NO: 7.6

ANOVA TABLE- HYPOTHESIS TESTING FOR RETURN ON NET WORTH

Source of Variation	SS	Df	MS	F	F crit
Between Samples	934.514	4	233.628	6.791	3.006
Between Years	1841.356	4	460.339	13.381	3.006
Error	550.407	16	34.400		
Total	3326.277	24			

The calculated value for ANOVA 'F-Test' is 6.791 which is higher than the Table value of 3.007. So, Null hypothesis is rejected and Alternate hypothesis is accepted. It shows that there is significant difference in the Return on Net Worth between selected samples during the study period of five years.

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4. CAPITAL ADEQUACY RATIO

TABLE NO: 7.7

CAPITAL ADEQUACY RATIO OF SELECTED SAMPLES

Name of Samples	2019	2018	2017	2016	2015	Mean	SD
State Bank of India	12.60	13.11	13.12	12.00	12.96	12.76	0.47
Central Bank of India	9.04	10.95	10.41	10.90	11.96	10.65	1.06
Bank of India	12.94	12.14	12.01	10.73	9.97	11.56	1.19
Bank of Baroda	12.13	13.17	13.17	12.60	12.28	12.67	0.49
Canara Bank	11.08	12.86	11.08	10.56	10.63	11.24	0.94

The table no.7.7 shows the Capital Adequacy Ratio of the selected samples of Public sector banks during the study period of five years from 2015 to 2019. The table also shows the Average and Standard deviation of available data. Amongst the selected samples, in the year 2018 & 2017 the Bank of Baroda shows the highest Capital Adequacy Ratio of 13.17 while on the other hand the lowest Capital Adequacy Ratio is observed for Central Bank of India i.e. 9.04 in the year 2019.

TABLE NO: 7.8

ANOVA TABLE- HYPOTHESIS TESTING FOR CAPITAL ADEQUACY RATIO

Source of Variation	SS	Df	MS	F	F crit
Between Samples	16.798	4	4.199	5.704	3.006
Between Years	3.754	4	0.938	1.275	3.006

Error	11.777	16	0.736		
Total	32.330	24			

The calculated value for ANOVA 'F-Test' is 5.705 whereas the Table value is 3.007 which is lower than the calculated value. Hence, here Null hypothesis is rejected and Alternate hypothesis is accepted. It shows that there is a significant difference in the Capital Adequacy Ratio between selected samples during the study period of five years.

5. TOTAL DEBT TO OWNERS FUND RATIO

TABLE NO: 7.9

TOTAL DEBT TO OWNER'S FUND RATIO OF SELECTED SAMPLES

Name of Samples	2019	2018	2017	2016	2015	Mean	SD
State Bank of India	15.79	15.08	14.24	13.87	13.34	14.46	0.97
Central Bank of India	16.71	17.72	19.14	18.00	21.26	18.57	1.73
Bank of India	18.82	18.83	18.19	18.19	17.56	18.32	0.52
Bank of Baroda	15.07	15.69	15.11	16.39	16.83	15.82	0.77
Canara Bank	19.38	18.89	19.37	18.88	18.57	19.02	0.35

The table no.7.9 shows the Total Debt to Owner's Fund Ratio of the selected samples of Public sector banks during the study period of five years from 2015 to 2019. The table also shows the Average and Standard deviation of available data. Amongst the selected samples, in the year 2015 the Central Bank of India shows the highest Total Debt to Owner's Fund Ratio of 21.26 while on the other hand the lowest Total Debt to Owner's Fund Ratio is observed for State Bank of India i.e. 13.34 in the year 2015.

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TABLE NO: 7.10

ANOVA TABLE- HYPOTHESIS TESTING FOR TOTAL DEBT TO OWNER FUND RATIO

Source of Variation	SS	Df	MS	F	F crit
Between Samples	79.044	4	19.7623	16.340	3.006
Between Years	0.562	4	0.140	0.116	3.006
Error	19.350	16	1.209		
Total	98.962	24			

The calculated value for ANOVA 'F-Test' is 16.340 whereas the Table value is 3.007 which is lower than the calculated value. Hence, here Null hypothesis is rejected and Alternate hypothesis is accepted. It shows that there is a significant difference in the Total Debt to Owners Fund Ratio between selected samples during the study period of five years.

8. CONCLUSION

Sr. no.	Name of the Ratio	Result of ANOVA
1.	Interest Spread Ratio	H1 is Accepted
2.	Net Profit Margin Ratio	H1 is Accepted
3.	Return on Net Worth Ratio	H1 is Accepted
4.	Capital Adequacy Ratio	H1 is Accepted
5.	Total Debt to Owner's Fund Ratio	H1 is Accepted

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