

# A Comparative Study on Risk Management of Selected Public and Private Sector Banks in India

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## Abstract

Risk Management is the proactive approach to plan, lead, organize, and control the wide variety of risks into the framework of an organization's daily and long-term functioning. Risk plays an important role in the achievement of our goals and in the overall success of an organization. This paper is an attempt to identify the different types of risks faced by the banking industry and to examine the different techniques adopted by the banks in managing risk. It has been concluded that the banks should take risk more willfully, anticipate adverse changes and hedge accordingly. The study recommended the banks to implement effective tools and techniques to reduce the different types of risks faced by the banks.

**Keywords;** Risk Management, Banking Industry, Credit Risk, Interest Rate Risk, Liquidity Risk.

## INTRODUCTION:

Risk management enables banks to bring their risk to manageable levels without severely dropping their income. Risk management does not mean risk decline. Thus, risk management enables a bank to take required level of risk exposures in order to achieve its revenue targets. Risk is defined as anything that can cause hindrances in the way of achievement of certain objectives. It can be because of either internal factors or external factors, depending upon the type of risk that exists within a particular condition. Exposure to that risk can make a situation more critical. A better way to deal with such a situation; is to take certain positive measures to identify any kind of risk that can result in undesirable outcomes. In simple terms, it can be said that managing a risk in advance is far better than waiting for its occurrence. Risk Management is a measure that is used for identifying, analyzing and

then responding to a particular risk. It is a continuous process and is helpful in decision-making. Credit risk, liquidity risk, interest rate risk, solvency risk and operational risk are the commonly faced by any bank.

## REVIEW OF LITERATURE

**Muhammad Ishtiaq (March 2015)** investigated in his paper "Risk Management in Banks: Determination of Practices and Relationship with Performance" that the variable for managing operational, credit and liquidity risk are important predictors of banks' performance. DEA technique was used which concluded that proper risk management enhances the performance of banks and helps to manage funds, decrease NPAs and maintain optimum level of capital adequacy.

**Daniel Onyebuchi Okehi (2014)** analysed in his paper "Modelling Risk Management in Banks: examining

why banks fail?” the significance of risk management practices and corporate governance practices. It was found that if proper risk management practices are followed, systemic failure in the banking industry can be avoided. Multiple regression model was used to study the relationship between risk management practices, good corporate governance and performance of the banks.

**Saeed MS, Zahid N (2016)**, found in their study, “The Impact of Credit Risk on Profitability of the Commercial Banks” the relationship between credit risk and profitability for the year 2007-15. The variables of credit risk were non-performing loans and that of profitability were return on assets and return on equity. Credit risk had a positive association with profitability. It was suggested that banks should reduce lending rates and commission if borrowers have to repay promptly.

**Anye Paul Tsi (2018)** investigated in her study, “Managing Liquidity Risk In Banks Case study Rural Investment Credit Bank Cameroon” that liquidity risk is influenced by interest rates fraud, concentration of loans and maturity mismatch of which concentration of loans was the major factor. It was found that profit was reduced due to rural investment credit and liquidity risk was managed by proper asset-liability management strategy and balance liquidity management strategy.

**Serhat Yüksel, Sinemis Zengin (2016)** found in their paper, “Identifying the Determinants of Interest Rate Risk of the Banks: A Case of Turkish Banking Sector” the factors influencing interest rate risk using 20 banks in Turkey. Those banks were exposed to higher interest rate risk which had higher deposits. There was a negative relationship between capital and interest rate risk.

#### **NEED FOR THE STUDY:**

The increasing advancements in technology and the effects of globalization and liberalization have exposed the banks to various kinds of risks. As risk is directly related to risks, banks are required to maintain equilibrium between risk and return. Cut-throat competitions, increasing volatility and entry of foreign markets have resulted in increased risk to the banks

which require a strategic management to deal with such risks. Banks are compelled to have a risk management framework to mitigate the internal and external risks faced by them.

#### **OBJECTIVES OF THE STUDY:**

- 1 To assess the magnitude of credit risk in selected Public and Private Sector Banks in India.
- 2 To appraise the magnitude of liquidity risk in selected Public and Private Sector Banks in India.
- 3 To measure the Interest Rate risk in selected Public and Private Sector Banks in India.

#### **RESEARCH METHODOLOGY:**

The paper is empirical in nature; in which conclusions have been reached on the basis of secondary data which has been collected from various officially published magazines, periodicals, and websites. Two public sector banks, viz., State Bank of India (SBI) and Bank of Baroda (BOB) and two private sector banks viz., ICICI Bank and Federal Bank (FB) have been selected for the study.

#### **ANALYSIS OF RISK MANAGEMENT OF SELECTED PUBLIC AND PRIVATE SECTOR BANKS:**

##### **1. CREDIT RISK MANAGEMENT**

Credit risk is the possibility that a bank borrower or counterparty will fail to meet its commitments according to agreed terms. It also involves the inability or unwillingness of a customer to meet his financial obligations. This ultimately results in losses due to the reduction in portfolio value arising from deterioration in credit quality. In order to reduce credit risk, banks should have credit risk policy which clearly defines their credit philosophy, credit culture and risk tolerance level. The following ratios have been used to identify the presence of credit risk in the selected banks.

##### **1.1 RATIO OF TOTAL LOANS TO TOTAL DEPOSITS:**

It is the ratio between the bank's Total loans and Total deposits. It is the ratio of how much a bank lends out of the deposits it has mobilized. A higher ratio indicates more dependence on deposits for lending and vice-versa. If the ratio is lower than one, it indicates

that the bank has relied on its own deposits to make loans to its customers without any outside borrowing.

$$\text{Total Loans to Total Assets} = \frac{\text{Total Loans}}{\text{Total Deposits}}$$

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	73.11	78.58	81.03	83.13	86.94	86.76	82.45	84.57	76.83	71.49	80.49
BOB	74.84	72.62	74.87	74.67	69.25	69.79	69.32	66.85	63.7	72.28	70.82
ICICI	99.98	89.7	95.91	99.31	99.19	102.05	107.18	103.28	94.73	91.34	98.27
FB	69.54	74.74	74.28	77.15	76.54	72.72	72.41	73.37	75.09	82.11	74.8

Source: Data collected from Annual reports of SBI, BOB, ICICI, and FB

**Inference:** ICICI Bank has the highest ratio of total loans to total assets and Bank of Baroda has the lowest ratio.

## 1.2 RATIO OF TOTAL LOANS TO TOTAL EQUITY:

The ratio is calculated as

Total Loans

Total Equity

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	9.36	9.58	11.64	10.33	10.57	10.23	10.12	10.15	8.34	8.83	8.96
BOB	11.22	11.59	10.87	10.46	10.27	11.03	10.75	9.55	9.51	9.85	10.51
ICICI	4.38	3.51	3.93	4.2	4.35	4.63	4.82	4.85	4.64	4.87	4.42
FB	5.18	5.75	6.25	6.62	6.93	6.25	6.63	7.18	8.2	7.53	6.65

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB

**Inference:** Bank of Baroda has the highest ratio of total loans to total asset and ICICI Bank has the lowest ratio comparing the average of the all banks.

## 1.3 RATIO OF NON-PERFORMING ASSETS TO TOTAL LOANS:

The Non Performing Assets to loans ratio is used as a measure of the overall quality of the bank's loan book.

NPA are those assets for which interest is overdue for more than 90 days (or 3 months). The lower the ratio, the better it is, because high NPAs bring in credit risk for the bank. This ratio is calculated using the following formula:

Non-Performing Assets (NPA)

Total Loans

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	2.90	3.09	3.35	4.57	4.9	5.09	4.36	6.71	7.15	11.55	5.37
BOB	1.28	1.37	1.38	1.55	2.43	2.99	3.8	10.56	11.15	13.21	4.97
ICICI	4.42	5.23	4.64	3.73	3.31	3.1	3.9	6.02	8.18	9.39	5.19
FB	2.63	3.05	3.59	3.45	3.52	2.5	2.06	2.87	2.35	3.04	2.91

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB

**Inference:** SBI has the highest ratio of total loans to total asset and Federal Bank has the lowest ratio compared with the average of the all banks.

## 1.4 RATIO OF PROVISION FOR LOAN LOSS TO NPA:

This ratio indicates the degree of safety measure adopted by the bank as it has direct bearing on the profitability, dividend and safety of shareholders' funds. If the ratio is low it indicates that bank has not made adequate provision for probable loan losses. The following formula is used to calculate the ratio:

Provision for loan loss

NPA

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	15.74	23.66	33.23	28.97	20.82	23.50	29.73	38.73	50.88	32.32	29.76
BOB	17.60	37.52	32.99	35.14	38.42	24.72	24.58	33.97	18.74	25.46	28.91
ICICI	39.1	46.0	20.5	11.4	14.5	21.4	20.8	27.5	37.3	27.7	26.6
FB	58.77	50.32	42.57	17.05	12.20	20.96	19.32	33.30	23.46	26.92	29.23

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB

**Inference:** SBI has the highest ratio of total loans to total asset and Federal Bank has the lowest ratio compared with the average of the all banks.

### 1.5 RATIO OF RISK ADJUSTED MARGIN:

It is a measure which shows the impact of credit risk on the profitability of the bank. Specifically, it is

calculated as net interest income plus other income minus provisions made during the year for loan losses divided by assets. The following formula is used to calculate the ratio:

$$\frac{(\text{Net Interest Income} + \text{other Income} - \text{Provision for Credit Losses})}{\text{Total Assets}}$$

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	3.22	3.23	3.26	3.46	3.17	2.98	2.97	2.1	1.48	1.37	2.72
BOB	3.23	2.82	2.95	2.72	2.17	2.05	1.9	0.59	1.76	1.08	2.13
ICICI	3.35	3.04	3.35	3.62	3.88	4.15	4.35	4.07	3.3	2.92	3.60
FB	3.82	3.5	3.45	3.73	3.45	3.61	3.69	2.99	3.24	2.88	3.44

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB

**Inference:** ICICI has the highest ratio of total loans to total asset and Bank of Baroda has the lowest ratio compared with the average of the all banks.

## 2. LIQUIDITY RISK MANAGEMENT:

A bank has sufficient liquidity when it is able to generate funds either by increasing the liabilities or by converting assets promptly or at a reasonable cost. The liquidity management refers to the ability of the bank to meet the liquidity needs whenever they emerge, both efficiently and economically without

incurring undue costs. The following ratios have been used to identify the presence of credit risk in the selected banks.

### 2.1 RATIO OF CORE DEPOSITS TO TOTAL ASSETS:

Core deposits are treated to be the stable source of liquidity. Core deposits constitute deposits from the public in the normal course of business. The following formula is used to calculate the ratio:

Core Deposits (Demand deposits+ saving deposits+ Term deposits)

Total assets

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	76.94	76.33	76.32	78.15	76.79	77.80	76.99	76.61	75.56	78.34	76.98
BOB	84.60	86.61	85.22	86.04	86.61	86.26	86.37	85.50	86.59	82.13	85.59
ICICI	57.57	55.59	55.54	53.94	54.51	55.82	55.96	58.47	63.49	63.81	57.47
FB	82.89	82.57	83.59	80.72	81.09	80.08	85.49	86.59	84.94	80.97	82.89

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB

**Inference:** Bank of Baroda has the highest ratio of total loans to total asset and ICICI Bank has the lowest ratio compared with the average of the all banks.

### 2.2 RATIO OF TOTAL LOANS TO TOTAL DEPOSITS:

This ratio indicates the amount of funds lent out of the deposits mobilized by the banker. If the ratio is lower

than one, it means the bank relied on its own deposits to make loans to its customers, without any outside borrowing. If the ratio is too high, the banks might not have enough liquidity to cover any unforeseen funding requirements or economic crises. The following formula is used to calculate the ratio:

$$\frac{\text{Total Loans (Advances)}}{\text{Total Deposits}}$$

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	73.11	78.58	81.03	83.13	86.94	86.76	82.45	84.57	76.83	71.49	80.49
BOB	74.84	72.62	74.87	74.67	69.25	69.79	69.32	66.85	63.7	72.28	70.82
ICICI	99.98	89.7	95.91	99.31	99.19	102.05	107.18	103.28	94.73	91.34	98.27
FB	69.54	74.74	74.28	77.15	76.54	72.72	72.41	73.37	75.09	82.11	74.8

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB

**Inference:** ICICI Bank has the highest ratio of total loans to total assets and Bank of Baroda has the lowest ratio compared with the average of the all banks.

### 2.3 RATIO OF LIQUID ASSETS TO TOTAL ASSETS:

It is the ratio of liquid assets to total assets. Higher level of liquid assets in total assets will ensure better

liquidity and lower liquidity risk. Liquid assets include cash in hand, balance with the RBI, balance with banks in India, Balance with the banks outside India and money at call and short notice. This ratio can be expressed as:

$$\frac{\text{Liquid assets}}{\text{Total assets}}$$

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	13.05	8.18	10.04	7.28	7.33	7.40	8.54	9.06	10.10	5.65	8.66
BOB	10.59	12.74	13.93	14.35	15.61	19.84	20.75	19.94	21.65	12.90	16.23
ICICI	7.90	10.70	9.70	8.96	7.72	9.68	6.55	8.31	9.81	9.57	8.59
FB	8.85	6.24	7.28	5.83	5.24	6.08	5.77	5.93	6.48	6.65	6.44

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB

**Inference:** ICICI Bank has the highest ratio of total loans to total assets and SBI has the lowest ratio compared with the average of the all banks.

### 2.4 RATIO OF MARKET LIABILITIES TO TOTAL ASSETS:

Market liabilities may include money market borrowings, interbank liabilities repayable within a short period. This ratio can be expressed as:

$$\frac{\text{Market Liabilities}}{\text{Total Assets}}$$

YEAR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	8.72	9.78	9.77	9.51	10.80	12.48	10.02	9.92	11.74	10.48	10.32
BOB	17.67	20.68	62.24	52.70	48.58	55.82	49.32	49.86	44.05	86.91	48.78
ICICI	30.60	31.84	30.98	34.05	32.21	30.87	32.70	30.58	19.12	20.80	29.37
FB	31.38	35.42	36.70	70.37	73.74	77.32	2888	25.14	55.19	89.14	52.33

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB

**Inference:** Federal Bank has the highest ratio of total loans to total assets and SBI has the lowest ratio compared with the average of the all banks.

### 2.5 RATIO OF SHORT-TERM LIABILITIES TO TOTAL ASSETS:

A short-term liability has required to be redeemed at the earliest. Therefore, they will require ready liquid assets to meet the liability. It is expected to be lower in the Interest of liquidity. Short-term liabilities include demand deposits, saving deposits and bills payable. A lower ratio is desirable. This ratio can be expressed as:

$$\frac{\text{Short Term Liabilities}}{\text{Total Assets}}$$

Year	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	AVG
SBI	4.28	4.57	3.95	1.03	3.57	3.45	3.28	4.16	4.31	9.25	4.18
BOB	2.56	2.62	2.49	2.34	2.22	2.24	2.31	2.28	2.82	2.97	2.48
ICICI	1.70	2.39	2.76	2.59	2.36	2.48	1.02	1.07	1.30	1.32	1.90
FB	2.85	2.99	2.72	2.56	6.31	6.89	2.65	2.95	2.81	2.75	3.55

Source: Data collected from Annual report of SBI, BOB, ICICI, and FB



**Inference:** SBI has the highest ratio of total loans to total asset and ICICI has the lowest ratio compared with the average of the all banks

- In such a scenario where the  $RSA < RSL$ , an upward movement in the interest rates will result in a decrease in the NII of the bank since more liabilities are repriced than assets

BANK S	PARTICULARS	1-14D	1.5-30D	31D-1M	2-3M	3-6M	6M-1Y	2-3Y	3-5Y	OVER 5Y	TOTAL
SBI	NII	4582.03	322.57	844.68	-425.96	-1509.67	-2264.55	-251.69	1518.69	4827.70	7643.80
	CUM. NII	4582.03	4904.61	5749.29	5323.33	3813.66	1549.11	1297.42	2816.11	7643.80	
BOB	NII	567.77	-52.32	-42.34	-151.73	-139.52	316.22	-37.90	304.75	872.44	1637.37
	CUM. NII	567.77	515.44	473.11	321.38	181.86	498.08	460.17	764.93	1637.37	
ICICI	NII	-7887.28	865.99	84.22	108.71	1398.85	-8279.22	1694.76	-7027.74	28.65	-19013.04
	CUM. NII	-7887.28	-7021.30	473.11	-6837.07	-5429.51	-13708.72	-12013.96	-19041.70	-19013.04	
FB	NII	-45.48	-13.87	-10.18	39.26	-13.39	-38.52	-126.29	-385.01	5.01	-588.47
	CUM. NII	-45.48	-59.35	-69.53	-30.27	-43.66	-82.19	-208.48	-593.48	-588.47	

### 3. INTEREST RATE RISK MANAGEMENT:

The effect of interest rate movements on the financial condition of a bank is called interest rate risk. Since, it has a direct impact on the profitability of a bank. The earnings perspective and the economic value perspective are the two most common perspectives of assessing a bank's exposure to interest rates. The gap between the rates sensitive assets and liabilities has been calculated which is the difference between the RSAs and RSLs for each of the time buckets.

**A positive gap indicates that,**

- The bank has more rate sensitive assets than rate sensitive liabilities, which means that the bank is "Asset sensitive."
- In such a scenario where the  $RSA > RSL$ , an upward movement in the interest rates will result in an increase in the NII of the bank since more assets are repriced than liabilities provided the rise in interest rates is equal for both RSAs as well as RSLs at given point in time.
- However, a downward movement in interest rates will lead to a decrease in the NII of the bank.

**A negative gap indicates that,**

- The bank has more rate sensitive liabilities than rate sensitive assets, which means that the bank is "liability sensitive."

provided the rise in interest rates is equal for both RSAs as well as RSLs at given point in time.

- However, a downward movement in interest rates will lead to an increase in the NII of the bank.

### SCENARIO ANALYSIS:

Scenario analysis has been employed to find the change in the net interest income (NII) of the banks when there is a change in the interest rates. For this purpose, two scenarios have been taken:

- When the interest rates are increased by 100 basis points.
- When the Interest rates are decreased by 100 basis points.

#### 3.1 SCENARIO 1: IMPACT ON THE NET INTEREST INCOME (NII) AND CUMULATIVE NET INTEREST INCOME (CUM NII) IF INTEREST RATES ARE INCREASED BY 100 BASIS POINTS

Scenario 1 shows the impact on the net interest income of the 4 selected banks if the interest rates are increased by 100 basis points.

In the case of State Bank of India, the NII would increase by ₹4582.03 cores in the 1-14 days time bucket if the interest rate were to increase by 100 basis points. But, thereafter, the NII would fall significantly and would reduce by ₹ -2264.55 cores in the 6 months to 1 year time bucket. This is due to the

BANKS	PARTICULARS	1-14D	15-30D	31D-1M	2-3M	3-6M	6M-1Y	2-3Y	3-5Y	OVER 5Y	TOTAL
SBI	NII	-4582.03	-322.57	-844.68	425.96	1509.67	2264.55	251.69	-1518.69	-4827.70	-7643.80
	CUM. NII	-4582.03	-4904.61	-5749.29	-5323.33	-3813.66	-1549.11	-1297.42	-2816.11	-7643.80	
BOB	NII	-567.77	52.32	42.34	151.73	139.52	-316.22	37.90	-304.75	-872.44	-1637.37
	CUM. NII	-567.77	-515.44	-473.11	-321.38	-181.86	-498.08	-460.17	-764.93	-1637.37	
ICICI	NII	7887.28	-865.99	-84.22	-108.71	-1398.85	8279.22	-1694.76	7027.74	-28.65	19013.04
	CUM. NII	7887.28	7021.30	-473.11	6837.07	5429.51	13708.72	12013.96	19041.70	19013.04	
FB	NII	45.48	13.87	10.18	-39.26	13.39	38.52	126.29	385.01	-5.01	588.47
	CUM. NII	45.48	59.35	69.53	30.27	43.66	82.19	208.48	593.48	588.47	

negative gap in the short-term time buckets. The bank has maintained a positive gap in the long run due to which the NII would increase by ₹4827.70 cores, the cumulative NII would also increase by ₹7643.80 cores in the over 5 years bucket.

In Bank of Baroda, all the time buckets have shown a negative gap in the short run except 1 -14 days and 6 months to 1 year. If the interest rates were to be increased by 100 basis points, the NII would increase by ₹498.08 cores in the period less than one year. Due to positive gaps in the long run, the NII would increase by ₹872.44 cores, the cumulative NII would also increase by ₹1637.37 cores.

In ICICI bank, all the time buckets have shown a positive gap in the short run except 1-14 days and 6 months to 1 year. If the interest rates were to be increased by 100 basis points, the NII would decrease by ₹13708.72 cores in the period less than one year. Due to positive gaps in the long run, the NII would increase by ₹28.65 cores, but the cumulative NII would decrease by ₹19013.04 cores.

In Federal bank, all the time buckets have shown a negative gap in the short run except 2-3 months. If the interest rates were to be increased by 100 basis points, the NII would reduce by ₹ -82.19 cores in the period less than one year. Due to positive gaps in the long run, the NII would increase by ₹ 5.01cores, but the cumulative NII would decrease by ₹ 588.47 cores.

#### SCENARIO 2: IMPACT ON THE NET INTEREST INCOME (NII) AND CUMULATIVE NET INTEREST INCOME (CUM NII) IF INTEREST RATES ARE DECREASED BY 100 BASIS POINTS.

Scenario -2 shows the impact on the net interest income of the 4 selected banks if the interest rates are decreased by 100 basis points.

In the case of State Bank of India, the NII would decrease by ₹4582.03 cores in the 1-14 days time bucket if the interest rate were to decrease by 100 basis points. But, thereafter, the NII would rise significantly and would increase by ₹ 2264.55 cores in the 6 months to 1-year time bucket. The bank has a negative gap in the long run due to which the NII would decrease by ₹4827.70 cores, the cumulative NII would also decrease by ₹7643.80 cores in the over 5 years bucket.

In Bank of Baroda, all the time buckets have shown a negative gap in the short run. If the interest rates were to be decreased by 100 basis points, the NII would reduce by ₹498.08 cores in the period less than one year. Due to negative gaps in the long run, the NII would decrease by ₹872.44 cores, the cumulative NII would also decrease by ₹1637.37 cores.

In ICICI bank, all the time buckets have shown a negative gap in the short run except 1 -14 days and 6 months to 1 year. If the interest rates were to be decreased by 100 basis points, the NII would increase by ₹13708.72 cores in the period less than one year. Due to negative gaps in the long run, the NII would decrease by ₹28.65 cores, but the cumulative NII would increase by ₹19013.04 cores.

In Federal bank, all the time buckets have shown a positive gap in the short run except 2-3

months. If the interest rates were to be decreased by 100 basis points, the NII would increase by ₹ 82.19 cores in the period less than one year. Due to negative gaps in the long run, the NII would decrease by ₹ 5.01cores, but the cumulative NII would increase by ₹ 588.47 cores.

### **FINDINGS:**

#### **CREDIT RISK MANAGEMENT:**

1. Ratio of Total Loans to Total Deposits is higher in case of public sector banks especially in ICICI Bank.
2. Ratio of Total Loans to Total Equity is highest in public sector banks particularly in Bank of Baroda.
3. Non-Performing Assets to Total Loans is highest in public sector banks especially in case of SBI.
4. Provision for Loan Loss to Non-Performing Assets ratio is higher in public sector banks particularly in SBI.
5. Risk Adjusted Margin ratio is lowest in public sector banks particularly in BOB.

#### **LIQUIDITY RISK MANAGEMENT:**

1. Core Deposits to Total Deposits ratio is higher in case of public sector banks particularly in Bank of Baroda.
2. Ratio of Total Loans to Total Deposits is highest in private sector banks particularly in ICICI bank.
3. Liquid Assets to Total Assets is higher in private sector banks in case of ICICI bank.
4. Market Liabilities to Total Assets ratio is highest in private sector banks especially in Federal bank.
5. Short term Liabilities to Total Assets ratio is higher in public sector banks in case of SBI.

#### **INTEREST RATE RISK MANAGEMENT:**

Scenario analysis shows the following results:

1. State Bank of India found negative gap in less than one year period but the long run on over five year period shows positive gap. The cumulative gap in all the time buckets showed positive gap. If the interest rates were to be increased by 100 basis points, the NII of SBI would increase by 1549.11 crores in the short run and would further increase to 7643.80 more in the long run. If the interest rates were to be decreased by 100 basis points, the NII of SBI would decrease by 1549.11 crores in the short run and would further decrease to 7643.80 more in the long run.
2. Bank of Baroda found negative gap in less than one year period but long run on over five year period shows positive gap. The cumulative gap in all the time

buckets found positive gap. If the interest rates were to be increased by 100 basis points, the NII of SBI would increase by 498.08 crores in the short run and would further increase to 1637.37 more in the long run. If the interest rates were to be decreased by 100 basis points, the NII of SBI would decrease by 498.08 crores in the short run and would further decrease to 1637.37 more in the long run.

3. ICICI Bank found negative gap in less than one-year period and also long run on over five year period shows negative gap. The cumulative gap in all the time buckets found negative gap. If the interest rates were to be increased by 100 basis points, the NII of SBI would decrease by 13708.72 crores in the short run and would further decrease to 19013.04 more in the end. If the interest rates were to be decreased by 100 basis points, the NII of SBI would increase by 13708.72 crores in the short run and would further increase to 19013.04 more in the long run.
4. Federal Bank found negative gap in less than one year period and also long run on over five year period shows negative gap. The cumulative gap in all the time buckets found negative gap. If the interest rates were to be increased by 100 basis points, the NII of SBI would decrease by 82.19 crores in the short run and would further decrease to 588.47 more in the long run. If the interest rates were to be decreased by 100 basis points, the NII of SBI would increase by 82.19 crores in the short run and would further increase to 588.47 more in the long run.

### **SUGGESTIONS:**

#### **CREDIT RISK MANAGEMENT:**

Credit risk is found to be more in the case of selected private sector banks. These banks could take the following steps to mitigate credit risk.

1. The credit should always be backed up by proper securitization.
2. The bank has to maintain strong relationship with the clients and conduct recovery camps for the effective recovery of loans.
3. The training to the bank managers regarding the bad debts identification and removal as to be extended. This will provide a long-term benefit to the bank.
4. It is suggested that in credit granting application, appraisal, sanction, disbursement, control activities are strictly observed,



Diversion of funds to be checked and need based assessment to be arrived to eliminate element of risks in the banks.

#### **LIQUIDITY RISK MANAGEMENT:**

Liquidity risk is found to be more in case selected public sector banks. These banks could take necessary steps to improve the liquidity risk.

1. Banks could hold liquid deposits in the central bank in the form of central bank certificates and short-term deposits in the other commercial banks. Even though they are less liquid than central bank certificates, they can also be redeemed on short notice.
2. The banks need to estimate the short-term demand for liquidity accurately. They have to maintain a contingency funding plan to meet the unforeseen financial requirements in the future.
3. The asset liability committee (ALCO) has to manage & monitor the daily liquidity position and perceive any liquidity imbalance. The ALCO has to maintain good relationship with external parties to manage & foresee liquidity pressures.
4. Banks should develop well-established strategies, policies, and procedures for managing both the sources and uses of an institution's funds. This includes assessing and planning for short-term, medium-term, and long-term liquidity needs.
5. The RBI may set benchmarks to liquidity risk ratios in order to manage liquidity risk at acceptable levels by all the banks in Indian banking sector.

#### **INTEREST RATE RISK MANAGEMENT:**

A study of scenario analysis showed that if the interest rates are decreased by 100 basis points, the net interest income of the public sector banks would get reduced. These banks could take the following steps:

1. A banking corporation's interest rate risk measurement system should address all material sources of interest rate risk including repricing, yield curve, basis, and risk exposures.

2. Banking corporations may use a variety of measurement techniques to evaluate their interest rate risk profile, provided that the techniques incorporate simulations.
3. Due to high cost and complication to calculate on-balance sheet hedging, the implementation of derivative instruments in the risk hedging is highly recommended to apply. Firstly, the bank can start with some available instrument in the market.

#### **CONCLUSION:**

The findings of the study reveal that the public sector banks are more exposed to risk compared to the private sector banks in India. Risk Management Committee, Credit Policy Committee, Asset Liability Committee, etc are such committees that handle the risk management aspects. The banks can take risk more consciously, anticipates adverse changes and hedge accordingly; it becomes a source of competitive advantage, as it can offer its products at a better price than its competitors can. Regarding use of risk management techniques, it is found that internal rating system and risk-adjusted rate of return on capital are important. The effectiveness of risk measurement in banks depends on efficient Management Information System, computerization and net working of the branch activities. Since risk management in general has very significant contribution to bank performance, the banks are advised to put more emphasis on risk management. In order to reduce risk on loans and achieve maximum performance, the banks need to allocate more funds to default rate management and try to maintain just optimum level of capital adequacy.

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