

A COMPARATIVE STUDY OF RISK PARAMETERS OF BANKS IN INDIA

Dr. Navneeta Singh

Reader, Department of Commerce

Netaji Subhash Chandra Bose Government Girls P.G. College, Lucknow

INTRODUCTION

The etymology of the word "Risk" can be traced to the Latin word "Rescum" meaning Risk at Sea or that which cuts. Risk is associated with uncertainty and reflected by way of charge on the fundamental/basic i.e. in the case of business it is the Capital, which is the cushion that protects the liability holders of an institution.

Risk is inherent in any walk of life in general and in financial sectors in particular. Business grows mainly by taking risk. Greater the risk, higher the profit and hence the business unit must strike a tradeoff between the two. The essential functions of risk management are to identify measure and more importantly monitor the profile of the bank. Risk Management system is the pro-active action in the present for the future. Managing risk is nothing but managing the change before the risk manages. While new avenues for the bank has opened up they have brought with them new risks as well, which the banks will have to handle and overcome.

When we use the term "Risk", we all mean financial risk or uncertainty of financial loss. If we consider risk in terms of probability of occurrence frequently, we measure risk on a scale, with certainty of occurrence at one end and certainty of non-occurrence at the other end. Risk is the greatest where the probability of occurrence or non-occurrence is equal.

Banks are exposed to competition and hence are to encounter various types of financial and non-financial risks. Risks and uncertain ties form an integral part of banking which by nature entails taking risks Till recently all the activities of banks were regulated and hence operational and environment risks were minimal.

There are three main categories of risks; Credit Risk, Market Risk & Operational Risk. Main features of these risks as well as various tools and techniques to manage Credit Risk, Market Risk and Operational Risk have been discussed in detail in this article.

These risks are inter-dependent and events affecting one area of risk can have ramifications and penetrations for a range of other categories of risks. Foremost thing is to understand the risks run by the bank and to ensure that the risks are properly confronted. Better insight, sharp intuition and longer experience are essential to manage the risks. . Each transaction that the bank undertakes changes the risk profile of the bank. The extent of calculations that need to be performed to understand the

impact of each such risk on the transactions of the bank makes it nearly impossible to continuously update the risk calculations. Hence, providing real time risk information is one of the key challenges of risk management exercise.

Risks have adverse impact on the bank's capital or earnings. The expected loss is to be borne by the borrower and depositors hence are to be taken care of by adequately pricing the products through risk premium and reserves created out of the earnings. It is the amount expected to be lost due to changes in credit quality resulting in default. Whereas, the unexpected loss on account of the individual exposure and the whole portfolio in entirety is to be borne by the bank itself and hence is to be a keen care of by the capital. Thus, the expected losses are covered by reserves/provisions and the unexpected losses require capital allocation. Hence the need for sufficient Capital Adequacy Ratio is felt. Each type of risks is measured to determine both the expected and unexpected losses using VaR (Value at Risk) or worst-case type analytical model.

THEORITICAL FRAMEWORK

Risks involved in Banking Portfolios: These risks can be classified in the following 4 heads namely.

1. Liquidity risk;
2. Interest rate risk;
3. Credit risk;
4. Capital risk

1. Liquidity Risk: It is the risk of meeting the Liquidity requirement of the banks as and when it arise without incurring unacceptable losses'. Liquidity risk includes the inability to manage unplanned decreases or changes in funding sources

Quantity of Liquidity Risk Indicators

The following indicators, as appropriate, should be used when assessing the **quantity** of liquidity risk.

A Low; ---

1. Funding sources are abundant and provide a competitive cost advantage.
2. Funding is widely diversified. There is little or no reliance on wholesale funding sources or other credit-sensitive funds providers.
3. Market alternatives exceed demand for liquidity, with no adverse changes expected.
4. Capacity to augment liquidity through asset sales and/or securitization is strong and the Bank has an established record in accessing these markets.
5. The volume of wholesale liabilities with embedded options is low.

6. The Bank is not vulnerable to funding difficulties should a material adverse change occur in market perception.
7. Support provided by the parent company is strong.
8. Earnings and capital exposure from the liquidity risk profile is negligible.

B Moderate

1. Sufficient funding sources are available which provide cost-effective liquidity.
2. Funding is generally diversified, with a few providers that may share common objectives and economic influences, but no significant concentrations. A modest reliance on wholesale funding may be evident.
3. Market alternatives are available to meet demand for liquidity at reasonable terms, costs, and tenors. The liquidity position is not expected to deteriorate in the near term.
4. The Bank has the potential capacity to augment liquidity through asset sales and/or securitization, but has little experience in accessing these markets.
5. Some wholesale funds contain embedded options, but potential impact is not significant.
6. The Bank is not excessively vulnerable to funding difficulties should a material adverse change occur in market perception.
7. The parent company provides adequate support.
8. Earnings or capital exposure from the liquidity risk profile is manageable.

C High

1. Funding sources and liability structures suggest current or potential difficulty in maintaining long-term and cost-effective liquidity.
2. Borrowing sources may be concentrated in a few providers or providers with common investment objectives or economic influences. A significant reliance on wholesale funds is evident.
3. Liquidity needs are increasing, but sources of market alternatives at reasonable terms, costs, and tenors are declining.
4. The Bank exhibits little capacity or potential to augment liquidity through asset sales or securitization. A lack of experience accessing these markets or unfavorable reputation may make this option questionable.
5. Material volumes of wholesale funds contain embedded options. The potential impact is significant.
6. The Bank's liquidity profile makes it vulnerable to funding difficulties should a material adverse change occur.

7. There is little or unknown support provided by the parent company.
8. Potential exposures to loss of earnings or capital due to high liability costs or unplanned asset reduction may be substantial.

It is measured with the ratio between liquidity out flow (withdrawal of deposits, repayment of bank borrowings) to liquid inflow (Maturing assets, fresh deposits etc.) A rough measurement of Liquidity risk will be (short term securities – Short term borrowing)/ Total Deposits. By increasing the proportion of liquid assets, bank can minimize the liquidity risk, but on this account its earning capacity will be adversely affected. The low interest bearing liquid investments affects both interest margin and profit margin.

The problem of liquidity for commercial banks is essentially of making available, at all the times, sufficient funds to meet the demand for money made from time to time. Liquidity is the protection against the risk that may develop in banks on account of forced sale or liquidate credit worthy assets in an adverse market causing unexpected losses. As explained by Howard D. Coosse, "In a more positive sense, liquidity can be defined as a bank's (or the banking System's) ability to meet not only possible withdrawal of deposits, but to provide for the legitimate credit needs of the community (or the economy) as well. It is in the latter sense that bank liquidity has been most sharply questioned in the recent years. To care for liquidity risk there should be appropriate liquidity reserves. These reserves should earn interest income and under all foreseeable circumstances be able to generate cash with little or no loss when the need arise"

2 Interest Rate Risk: It is the risk arising out of changes in interest rates and their impact on the income of the bank and the values of its assets and liabilities. The assets or liabilities which are sensitive to interest rate changes are called Interest-sensitive. Interest rate risk can be measured as the ratio of interest sensitive assets to interest sensitive liabilities. An ideal ratio is considered one which safeguards safety with the interest rate fluctuations. The bank with interest rate risk of 1 will have equal variation in interest income or interest cost and therefore net-impact on the profit will be zero. If the ratio is below or above 1, the bank-profits will fluctuate depending upon how fast the interest rate on advances increases in comparison to the cost of deposits. A bank portfolio manager should monitor the interest rate moments or adjust the portfolio accordingly.

It is a common knowledge that when market interest rate, rise the prices of existing bonds depreciates and when interest rates decline the prices of bond appreciates. The changes in bond values depends upon changes in market interest rates popularly known as yield and endogenous relations to the security like coupon rate frequency of payment of coupons and the remaining term to maturity of bonds. The changes in

interest rate affect the values of assets and liabilities items to a great extent. Its impact calculation is a difficult task. The concept of duration is helpful to get over the above problem. Duration of a coupon bearing bond is the weighted average maturity of its cash-flow in present value items. The value impact on the market-value of equity change is calculated by multiplying the modified duration of the equity with the expected change in the interest rate. The duration gap is the difference between the duration of assets and the effective duration of liabilities. This can be zero, positive or negative. If duration gap is 0 (zero) the net worth of the bank is immunized against the interest-rate risk. If duration gap is positive value of net worth decreases when interest rate rises and value of net-worth increases when interest rate declines. If duration gap is negative value of net-worth increases when interest rate rises and vice-versa. Risk-averse banks try to reduce duration-gaps.

3. Credit Risk: This is the risk resulting on account of default of repayment of principal and interest payment. It is true that first the default starts from payment of interest. In interest is regularly paid in time, loan is considered safe. It is therefore, investment risk is considered in terms of variability in the interest rates. Credit risk is defined by the losses on the part of borrower to repay his obligation in the form of interest and installments or in the events of a deterioration of the clients credit worthiness. In the credit risk rating, both, dimensions default and irrecoverable positions are taken into consideration. Here exposure risk should also be taken into consideration. Exposure risk is generated by uncertainty associated with future amount at risk. On some of the financing facilities like Amortized Credit and the credits for which there is a credit schedule, exposure risk is very small. But, other lines of credit like cash credit facility, overdraft balancing, this risk is relatively high. Exposure risk may also arise with derivative trading, on account of changed market behavior and movements.

The liquidation value of derivatives depends upon movements and changes constantly. Whenever the liquidation value is positive, there is credit risk for the bank, since bank may lose money if the counter party defaults. In credit risk recovery risk is also calculated which arises in the event of unpredictable recoveries. This is on account of many factors such as whether guarantees have been received from the borrower, the types of such guarantees – collateral or third party guarantee and circumstances surrounding the default. In credit risk, collateral risk is also inherited. The existence of collateral minimizes the risk, provided, collateral can easily be taken in position and disposed off at significant value. The value of the collateral depends upon its nature and market conditions. Fixed equipment generally has a lower resale value whereas cash collateral value is 100%. There is also third party guarantor risk. A third party provides guarantee to the bank at the request of the borrower. This transforms the default risk of the borrower into a joint default risk of the borrower plus the guarantor. There also emerges the legal risk of not being able to enforce the guarantee. In this

channel of credit risk the last aspect is the legal risk. A banking company resorts to legal action after due notices and negotiations efforts. In such a case, all commitments given to the borrower is suspended until some legal conclusion is reached. In this process, recoveries will be suspended. In the worst situation, there may also arise situation of no recovery because the company is resold or liquidated and fund available for repayment remains very insufficient.

The Reserve Bank of India as an apex bank and controller of the Banking System has issued guidelines for monetary credit risk in the Indian Banking Sector. A broad framework of guidelines is summarized below:-

1. Bank should frame broad policy spectrum while explaining target markets, risk acceptance criteria, credit approval authority, credit authorization, maintenance procedure and guidelines for portfolio management and risk management.
2. Banks should establish credit risk management practices like annual or half yearly industry studies and reviews, period planned visits and review of weak credits.
3. Business managers should be made accountable for risk management. Banks should define risk limits and lay down procedures for risk management.
4. Bank should have a system of check and balances in the place around the extension of credit.
5. The credit approving authority should be granted to only those officers having adequate experience and risk judging ability. The level of authority should increase with the increase in amount and worsening risk ratings. There should be consistency in credit standards and evaluation of credit risk.

4 Capital Risk: It is the risk that arises on account of reduction in capital due to losses. It measures how much the asset values may decline before the position of creditors and depositors becomes critical. Keeping adequate capacity is the hedge against capital risk. Higher the capital to assets ratio, lower will be the capital risk and vice-versa. But, this is a double edged sword. On the one hand, risk is reduced, but, on the other hand also reduces return on equity. Therefore, there is need for a proper balance between the risk reduction and earning enhancement objectives and in that line, the equity capital should be designed. Capital risk can be calculated by calculating the ratio between capital and risk assets. The following factors are generally taken into consideration to affect the adequacy of capital –

1. The level of capital which is considered appropriate by the bank management for the operation of the banking business.
2. The minimum level of capital prescribed by the regulatory authority. The level of such capital changes from time to time and situation to situation. The Reserve Bank of India issued capital adequacy norms 1988 which was amended in 1996. As per these guidelines, banks were required to maintain a minimum capital to risk

weightage Assets Ratio (CRAR) of 8%. With effect from 1st April, 2000, banks are required to maintain this ratio at 9% on an ongoing basis. The capital to Risk Weightage Assets Ratio is calculated as under –

$$\text{CRAR} = \text{Capital} / \text{Risk Weighted Assets} \times 100$$

The definition of capital and its various components as per the Basel Committee Recommendations weight prescribed by RBI for different categories of funded risk assets are summarized below:-

Types of funded Risk Assets	Risk Weight (%)
1. Cash and balance with RBI, loans & Advances guaranteed by Centre and State Governments, SSI advances Guaranteed by (CGTSI), advances Against term deposits, LIC policies, etc. where adequate margin is available Equity investment in subsidiaries etc.	0%
2. Investment in Government Securities, investment in other approved securities guaranteed by Govt.	2.50%
3. Balance in current account with other banks. Claims on banks & public finance institutions, loans and advances granted to staff of banks fully covered by super-annuation benefits etc.	20%
4. Investment in Government guaranteed securities of Government undertakings which do not form part of the approved market borrowing programmes	22.5%
5. Advances covered by DICGC / ECGC, housing loan to individuals against the mortgage of residential housing properties.	52.5%
6. Investment in mortgage backed securities	52.5%
7. Loans guaranteed to public sector undertakings to Government of India and State Governments, Loans and leased assets, takeovers, foreign exchange, open positions in gold, premises, furniture and fixers and all other assets.	100%
8. Investments in subordinated debt instruments and bonds issued by other banks or public financial institutions for the tyre second capital, Deposits placed with SIDBI / NABARD in lieu of shortfall in lending to priority sector	102.5%

III Comparison of Risk Parameter of different groups of Banks in India

1. Comparison of Liquidity Risk

Table No.1

Liquidity Risk (Short Term Securities / Deposits)

Category of Banks	2005	2006	2007	2008	2009	2010	Mean	St. Dev.
All Scheduled Banks	5.19	5.38	5.70	5.72	5.39	5.58	5.4933	.2084
SBI & Groups	5.55	5.20	9.22	6.51	5.75	5.40	6.2717	1.5133
Nationalized Banks	4.00	4.28	3.38	3.99	4.20	4.48	4.0550	.3782
Other Scheduled Bank	5.93	5.43	5.53	5.82	6.13	5.63	5.7450	.2633
Foreign Bank	13.21	16.45	9.35	12.31	13.41	16.45	13.5300	2.6881

Source...Various issues of R.B.I. bulletins and statistical Tables Relating to Banks in India and Reports On Trends and Progress of banking in India.

The above Table reveals that Liquidity Risk has been ranging between 9.35 to 16.45 in Foreign Banks. It has ranged between 5.43 to 6.13 in Other Scheduled Banks. In SBI and Groups it has been between 5.20 to 9.22. In Nationalized Banks it has been between 3.38 to 4.28. If we look at the Mean Value of Liquidity Risk we find that it is very high in Foreign Banks which is 13.53 and very low in Nationalized Banks which is 4.05. The degree of variation (Standard Deviation) is very high in Foreign Banks which is 2.68 and very low in Other Scheduled Bank which is .26.

2. Comparison of Interest Rate Risk

Table No.2

Interest Rate Risk (Interest Sensitive Assets / Interest Sensitive Liability)

Category of Banks	2005	2006	2007	2008	2009	2010	Mean	St. Dev.
All Scheduled Banks	1.65	1.48	2.04	1.90	1.70	1.53	1.7167	.2162
SBI & Groups	1.80	1.45	2.22	1.99	1.85	1.50	1.8017	.2924
Nationalized Banks	1.70	1.55	2.13	2.03	1.75	2.60	1.9600	.3803
Other Scheduled Bank	1.54	1.55	1.77	1.66	1.59	1.60	1.6183	.565
Foreign Bank	1.12	1.05	1.52	1.30	1.17	1.10	1.2100	.1741

Source...Various issues of R.B.I. bulletins and statistical Tables Relating to Banks in India and Reports On Trends and Progress of banking in India.

The above Table reveals that Interest Rate Risk in Foreign Banks has been between 1.05 to 1.52; in other Scheduled Banks it has been between 1.54 to 1.77; in Nationalized Banks it has been between 1.55 to 2.26 and in SBI & Groups it has been between 1.45 to 2.22. If we look at the Mean Value of Interest Risk we find that it is very high in Nationalized Banks which is 1.96 and very low in Foreign Banks which is 1.21. The degree of variation (Standard Deviation) is very high in Other Scheduled Banks which is .56 and very low in Foreign Banks which is 0.17. Thus the interest rate risk has been very high in public Sector Banks as compared to Private Sector and Foreign Banks.

3. Credit Risk –

Table No 3
Credit Risk (Medium Quality Loan / Assets)

Category of Banks	2005	2006	2007	2008	2009	2010	Mean	St. Dev.
All Scheduled Banks	18.55	20.41	21.22	19.33	19.05	20.91	19.9117	1.0855
SBI & Groups	17.40	20.22	20.23	18.69	17.94	20.72	19.2000	1.3784
Nationalized Banks	20.94	23.35	25.05	22.16	21.44	23.85	22.7983	1.5612
Other Scheduled Bank	13.31	14.07	13.52	12.86	13.81	14.57	13.6900	.5992
Foreign Bank	20.04	19.72	13.89	20.18	20.54	20.22	19.0983	2.5654

Source...Various issues of R.B.I. bulletins and statistical Tables Relating to Banks in India and Reports On Trends and Progress of banking in India.

The above Table reveals that Credit Risk in Foreign Banks has been between 13.89 to 20.54; in other Scheduled Banks it has been between 12.86 to 14.87; in Nationalized Banks it has been between 20.94 to 25.05; and in SBI & Groups it has been between 17.4 to 20.72.

If we look at the Mean Value of Credit Risk we find that it is very high in Nationalized Banks (Public Sector Banks) which is 2.79 and very low in Other Scheduled Banks which is 13.69.

The degree of variation (Standard Deviation) is very high in Foreign Banks which is 2.56 and very low in Other Scheduled Banks which is 1.59.

Thus it is clear that the Credit Risk is very high in Foreign Banks and low in Private Sector Banks.

4. Capital Risk –

Table No.4
Capital Risk (Capital/Risk Assets)

Category of Banks	2005	2006	2007	2008	2009	2010	Mean	St. Dev.
All Scheduled Banks	7.40	7.68	6.30	6.50	6.90	7.18	6.9933	.5300
SBI & Groups	6.01	6.31	5.11	5.43	5.51	5.81	5.6967	.4330
Nationalized Banks	5.75	6.77	5.72	6.01	5.25	6.27	5.9617	.5216
Other Scheduled Bank	8.40	8.88	7.01	6.36	7.90	8.38	7.8217	.9558
Foreign Bank	16.03	16.07	13.90	14.04	15.53	15.07	15.1067	.9545

Source...Various issues of R.B.I. bulletins and statistical Tables Relating to Banks In India and Reports On Trends and Progress of banking in India.

Capital Risk is very high in Foreign Banks and Private Sector Banks and very low in Public Sector Banks as it is clear from the Table No.10 given below:-

The Table reveals that capital risk has been ranging between 13.9 to 16.07 in Foreign Bank. In Other Scheduled Banks it has been between 6.36 to 8.88. In Nationalized Banks it has been between 5.25 to 6.77. In SBI and Groups it has been between 5.11 to 6.31.

If we look at the Mean Value of Capital Risk we find that it is very high in Foreign Banks which is 15.10 and very low in SBI and Groups which is 5.69. The degree of variation (Standard Deviation) is also very high in Foreign Banks which is .96 and very low in SBI and Groups which is 0.43. This indicates that Capital is adequate in Public Sector Banks and less adequate in Private Sector Banks and Foreign Banks.

The comparison of various risk parameters of different categories of Scheduled Commercial Banks reveals that degrees of risks faced by different categories of Scheduled Commercial Banks are different. Degree of Risk has been very high in Foreign Bank and Other Scheduled Banks and low in Public Sector Banks.

REFERENCES:

1. Abrol, Prem Nath: Commercial Banking, Anmol Publication, Delhi, 1987
2. Bhanot, S.P.: Profitability of Banks, Indian Banking today and tomorrow, Aug. 1988, PP.3-7
3. Chandan C. L. and Rajput Pawan Kumar (2002) "Profitability Analysis of Banks in India: A Multiple Regression Approach", Indian Management Studies Journal, Vol.6, pp.119-129.

4. Das Gupta, M. and Mukherjee C.: Portfolio Management of the Commercial Banks, *Indian Journal of Economics*, 57 (4), April, 1979, PP. 421- 38
5. Kamal Nayan: *Commercial Bank in India, Performance evaluation* (Deep and Deep Publications, 1985)
6. Ketkar Kusum W, Noulas Athanasios G and Agarwal Man Mohan (2003) "An Analysis of Efficiency and Productivity Growth of the Indian Banking Sector", *Finance India*, Vol. XVII, No. 2, pp.511-513.
7. Magen,S.D.: *The Cost of Funds to Commercial Bank: An Econometric Analysis*, (Dunellen, New York)
8. Mittal, Manish and Aruna Dhade.2007.'Profitability and Productivity in Indian Banks: A Comparative Study', *AIMS International*, Volume 1, Number 2, May, 137-152
9. Murthy, P.V.: "Cost and Profitability of Public Sector Banks" Mohit Publications, New Delhi, 1996
10. Sensarma, R. 2006. 'Are Foreign Banks always the best? Comparison of State-Owned, Private and Foreign Banks in India', *Economic Modeling*, April
11. The Reserve Bank of India, 'Statistical Tables Relating to Banks in India' various years
12. The Reserve Bank of India, 'The Report on Trend and Progress of Banking in India', various years
13. Verghese, S.K.: *Profits and Profitability of Indian Commercial Banks in the Seventies*, National Institute of Bank Management, Bombay, 1983
14. Vipin Shah: *Cost and Efficiency in Banking* (Printice Hall Publishers, Jaipur, 1987)