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Mrs. Reshma D. Prabhu Verlekar & Dr. Manoj S. Kamat (65-70)

CREDIT RISK MANAGEMENT ANALYSIS FRAMEWORK OF INDIAN BANKS

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Introduction: In view of growing complexities of bank's business and the dynamic operating environment, risk management has become very significant. Risk management process provides reasonable assurance of achieving corporate objectives, such as high level goals, compliance with applicable laws and regulation. These changes greatly affect banks, not only to transform but also envision new business model to reposition them in changed scenario. Each of the major trends driving the banking sector present unique challenges. The efficiency and strength of banking companies depend on their ability to absorb and adjust to ever changing environment as quickly as possible. The success of bank is the function of balance between enhancing profit and managing risk. Risk management also helps in encouragement to firm's specific investment; synchronized interest of management with owners; designing of management compensation plan; reduction in losses and earnings volatility. However, with the passage of time risk management in banks also witnessed a substantial change. The regulations that emerged from the global financial crisis and the fines that were levied in its wake triggered a wave of change in risk functions. These included more detailed and demanding capital, leverage, liquidity, and funding requirements, as well as higher standards for risk reporting, (Phillipe 2015), hence risk management is essential today for compliance of regulation. The study of risk management is also significant because today's banks run its operation with two goals in mind – to generate profit and to stay in the business (Marision 2005), In other words, although avoiding failure is the principal reason for managing risk, financial institution also have broader objective of maximising Risk Adjusted Rate of Return on Capital (RAROC). This means measuring and managing risk relative to returns to capital. According to Abiola and Alayousis (2014) the importance of risk management in banks is because of their effect on financial crisis and determining the role of its survival growth and profitability of bank. Today, banking activity is becoming more complex compounded by exploding technological capabilities, expanding product offered and deregulation of competitions (Pathi and Murthy 2013), and thus banking is business of risk and this demands requirement for risk management. Banks face three types of risk – Credit risk, Market Risk and Operational risk. Among these risk credit risk is most important because it has substantial effect on the return on investment of the bank. According to Ngoroge and Ngahu (2017) Credit risk is a big threat for banks as the value of any organization is measured by its credit worthiness. Therefore, credit risk management is of critical importance for the good performance of banks. Credit risk management practices is an issue of concern in financial institutions today and there is need to develop improved processes and systems to deliver better visibility into future performance (Gakhure and Waithaka 2012).Present paper is thus designed to understand the credit risk management practices followed by Indian banking sector.

2. Theoretical Exposition and Review of Literature: Derban, Binner and Mullineux (2005) recommended that borrowers should be screened especially by banking institutions in form of credit assessment. Collection of reliable information from prospective borrowers becomes critical in accomplishing effective screening as indicated by symmetric information theory. Qualitative and quantitative techniques can be used in assessing the borrowers although one major challenge of using

qualitative models is their subjective nature. However according to Derban, Binner and Mullineux (2005), borrowers attributes assessed through qualitative models can be assigned numbers with the sum of the values compared to a threshold. This technique minimizes processing costs, reduces subjective judgments and possible biases (Gakure and Waithaka, 2012) A more interesting alternative was the Arbitrage Pricing Theory (APT) of Ross (1976). Stephen Ross's APT approach moved away from the risk vs. return logic of the CAPM, and exploited the notion of pricing by arbitrage to its fullest possible extent. As Ross himself has noted, arbitrage-theoretic reasoning is not unique to his particular theory but is in fact the underlying logic and methodology of virtually all of finance theory. (Gakure and Waithaka, 2012) This theory subscribes to the fact that an estimate of the benefits of diversification would require that practitioners calculate the covariance of returns between every pair of assets. In their Capital Asset Pricing Model (CAPM), Morris (2001) solved this practical difficulty by demonstrating that one could achieve the same result merely by calculating the covariance of every asset with respect to a general market index. With the necessary calculating power reduced to computing these far fewer terms (betas), optimal portfolio selection became computationally feasible. Diksha and Arora (2009) critically examined the current risk management practices of three banks. Primary and secondary data was used to collect data. Research concludes that most of the banks do not have risk management team, policy, procedure and framework in place and banks to come up with transparent and appropriate corporate governance structure. However study did not revealed the implications of RBI norms on risk management practices in Indian banks. Bodla and Verma (2009) conducted study on credit risk management framework at Banks in India and concluded that Good risk management is good banking which ultimately lead to profitable survival of the institution. Kumar, and et. (2011), in his studies developed a Credit Risk management (CRM) index score. The idea behind study is CRM index will act as a benchmark for CRM practices. The proposed CRM index was tested on 33public and private banks to judge its validity. His study further used co-relation analysis between CRM index score and NPA ratio. The result shows close exposure between CRM index and Credit risk exposure. Also, to test the reliability of index regression analysis was carried- result shows increase in the CRM index score leads to decrease in the value of NPA ratio. Nandi and Chaudhary (2011) examined the empirical evidence of Credit Risk Management of Loan Portfolios by Indian Banks and established an internal credit rating model for banks which improves their credit current predictive power of financial risk factor with the help of Altman Z-score model and Multivariate Discriminate Analysis. In his study current ratio is used as indicator to depict the financial health; however it cannot be taken as sole criteria to judge the financial health of banks. Kattel (2016), in his paper found the significant difference of mean value of credit risk tools and techniques of private and joint venture banks. One way ANNOVA has been used to see the difference between private banks and joint venture banks in usage of tools and techniques such as Matrix method, Internal Judgment, standard approach, Causal method VAR linear probability, and linear Discriminant analysis. There found a significant difference of mean value of credit risk tools and techniques in private and joint venture banks. Most of the studies have focused on credit risk and its management, however very few studies are available on credit risk management practices. Though some studies do available covering a small size of three to four banks, there is need to do study on more sample size. Ample literature is available covering data period of three to five years. Literature need to be developed covering a data period of more than five years. Some of the studies focused on development and testing of CRM index in Indian banks, so country specific characteristics might restrict the generalization of construct for index.

3. Objectives and Methodology : Credit risk management practices is found an issue of concern in financial institutions today and there is need to develop improved processes and systems to deliver better visibility into future performance (Gakure, 2012). In this context the present paper is designed to understand the credit risk management practices followed by Indian banking sector Population comprises

of 6[illegible] banks present in Goa. A sample of 30 banks from Bardez and Tiswadi Taluka from Goa were selected. Systematic Random Sampling Method is used to select sample a survey of 10 public sector banks, 10 private banks and 10 Co-operative banks were conducted. A structured questionnaire and personal interview was administered for data collection. The information so gathered is presented in tabular form and in graphical format. The present study was carried out in the period from October 2013 - February 2014. Since the objective of the survey was to understand the risk management practices followed by banks, hence questions were asked on different aspects of credit risk. Bank managers of different branches were interviewed. Credit risk is potential that a bank borrower fails to meet the obligation on agreed terms. Credit risk is defined as the possibility of losses associated with diminution in the credit quality of borrowers or counterparties. It is critical since the default of a small number of important customers can generate large losses. Alternatively, losses result from reduction in portfolio value arising from actual or perceived deterioration in credit quality. Following are some of the tools used for evaluation of Credit Risk:

Exposure Ceilings: Under this instrument Prudential limit is linked to capital funds – Say 15% for individual borrower, 40% for group with additional 10% for infrastructure project undertaken by the group

Review/Renewal: Multi- tier Credit Approving Authority, Constitution wise delegation of powers, higher delegated power for better customers,

Risk Rating model: set up comprehensive risk scoring system on a six to nine point scale. Clearly define rating thresholds and review the ratings periodically preferably at half yearly interval. Rating migration is to be mapped to estimate the expected loss.

Risk Based Scientific pricing: Link loan pricing to expected losses

Credit Portfolio management: it involves distribution of borrowers to various industry, business groups and rapid portfolios reviews

Loan Review mechanism: It is referred as Credit Audit covering review of sanction process, compliance status, review of risk rating with the objective of improving credit quality.

The liberalization of the Indian economy has brought about sweeping changes in the economic environment and has induced new anticipated and unforeseen risk in lending. The assessment of this risk is essential to facilitate prudent credit decision. The RBI has issued guidelines to all banks to have proper credit risk management in place. Credit risk measurement techniques are econometric technique neural network, Optimization model, rule based and hybrid system- Models covering techniques are- Altman's-Z score model, KMV model, Credit metrics etc.

4 Results and Discussion: The Present study is based on the observation of 30 Indian Commercial banks operating in India. From the analysis it is learned that Public banks take more precaution or follow all the criteria before granting loan also, all the banks from sample face credit risk. It can be said that credit risk is inherent limitation of the banks. It was also observed that all the banks from sample makes credit risk policy and have credit risk management committee in place.

A. **Types of risk faced by bank:** In Financial sector, especially the banking industry is passing through process of change. These change led banks to encounter various types of financial and non financial risk. The main three categories of risk that appear in banking parlance are credit risk, Market risk and operational risk. Survey results shows that, the Public and the Private sector banks on an average demonstrate a higher awareness of the three main risks faced by the banking industry. The localized character of the Cooperative banks, not-so professional management reflect in the lack of general awareness by the banks in the cooperative sector compared to their public and private sector counterparts. Interestingly, all the managers in the sample show greater awareness about the extent of credit risk faced by them. Thus due to increase NPA's in banks, lending risks are greatly perceived in the banking industry.

Since all the banks in the sample face credit risk, it can be said that credit risk is the inherent limitation of the banks. Hence it is crucial for the banks to monitor and manage this risk to avoid liquidation of banks. It is observed that the all banks demonstrate less awareness about Interest rate risks, compared to other 2 types of risks. It may be due to fact that IRR can increase or decrease without outward signs and such changes can cause failure. At the same time, regulators and banks can monitor it and detect changes; finally banks can take preventive steps to manage it.

Table 1 Types of risks

Banks	Credit risk	Interest rate risk	Operational risk
Public	100%	60%	70%
Private	100%	50%	80%
Co-operative	100%	30%	50%

B Presence of Credit Risk Management Committees and Policy

It is vital for the banks to have Credit Risk Management committee in place to implement credit risk policy approved by the board, to monitor credit risk and to ensure compliance with limits approved by the board. Survey results shows that all 30 banks in the given sample have formed a credit risk management committee and have a credit risk policy in place. It is important to make credit risk policy as it defines the target markets, risk acceptance criteria, credit origination procedures etc. Credit risk policy document also includes risk identification, risk measurement and risk grading techniques.

Table 2 Presence of credit risk management committee and credit risk policy in banks

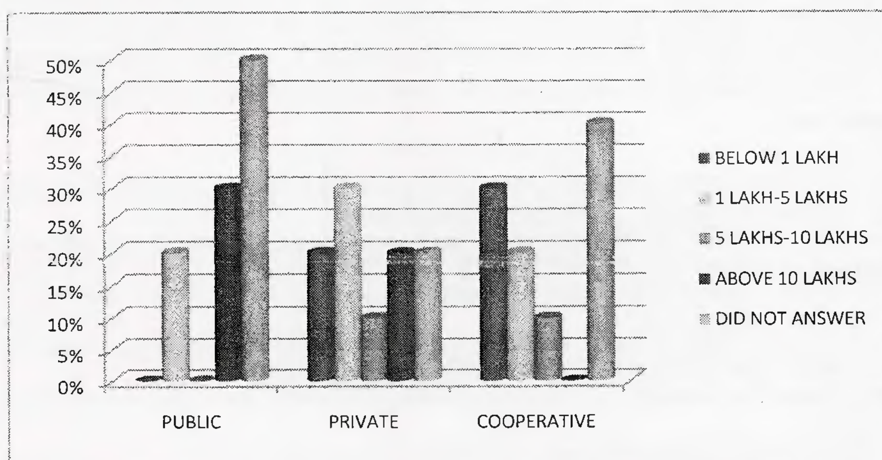
Banks	Yes	No
Public	**100%**	**0%**
Private	**100%**	**0%**
Cooperative	**100%**	**0%**

C Use of Credit Rating Tools: Credit risk rating is a rating assigned to borrowers, based on an analysis of their ability and willingness to repay the debt taken from the bank. Credit risk rating tool has been developed with a view to provide standard system for assigning a credit risk rating to the borrowers of the banks according to their risk profile. The tool evaluates the credit risk rating of a borrower on a scale of AAA to D with indicating AAA minimum risk and D indicating maximum risk. Better the rating lower is the probability of default. The rating tool can be focused on areas such as –Quality of management, Business performance, Financial Projection, Industry Outlook etc. The banks may use any number of financial ratios and operational parameters and collaterals and industry characteristics that have bearings on creditworthiness of borrowers. Survey results shows that all of the public and private sector banks from the selected sample follow credit rating tool whereas only 40% of cooperative sector banks do not follow rating tools. However on enquiry it was found that our entire sample checks the creditworthiness of the borrower before giving credit. Creditworthiness of the borrower is required to be checked so that the loan given to the borrower is repaid on time. If the bank fails to check the creditworthiness of the borrower it may suffer the risk of default. Certain Co-operative banks still follows primitive method of working. It is observed that staff of Co-operative banks is not aware about the modern tools for rating creditworthiness of borrower as a precautionary measure before granting loan. Cooperative banks need to follow rating tools before giving credit to avoid the risk of default

Table 3 Follow of credit rating tools

Banks	Yes	No
Public	100%	0%
Private	100%	0%
Cooperative	60%	40%

Quantum of Loss Suffered due to Credit Risk : The following bar diagram presents the quantum of loss suffered due to credit risk in banks. It is depicted that 30% of public sector banks suffer a loss above 10 lakhs whereas only 10% of Private sector banks suffer a loss in between 5-10 lakhs. In cooperative sector 30% of the banks suffer a loss below 1 lakhs. New and private banks, with their high capital adequacy ratio and better Information Technology and other modern financial skills of personnel are well placed to manage credit risk (Diksha and Arora, 2009). Public sector units although dominant banks in Indian financial system face a challenge in managing credit risk. Hence some of the respondent shows no response as it shows that they are not aware / may not have calculated / or do not want to disclose the quantum of loss suffered by them. In order to control the loss suffered due to credit risk the banks should take appropriate steps such as strict compliance to RBI norms, Better credit risk management, Implementation of integrated, quantitative credit risk solution (Better model, Data visualization capabilities, Stress testing) etc.



Criteria followed before Grant of Loan: Every bank follows some preliminary steps before grant of loan. Some bank may follow lengthy procedure, whereas some may follow one step before grant of loan. Survey result in table 5 depicts that small portion i.e. 20% of public sector banks checks integrity before granting loan to borrower and most of them that is, 60% of the private sector banks checks track record before granting loan to borrower whereas none of the public and cooperative sector banks checks personal guarantee as a sole factor for granting loan.

It is also found that Public and co-operative banks do not rely only on one factor- that is personal guarantee before granting loan. It is also observed that most of the public sector banks are on the precautionary side that follows all three factors simultaneously before granting loan. However, private banks follow one factor individually before grant of loan as they may take risk for customer retention.

Table 4 criteria followed before grant of loan

Particulars	Frequency Public Banks	Frequency Private Banks	Frequency Cooperative Banks
Integrity Check	2	3	3
Track record Check	3	6	4
Insist on Personal Guarantee	0	1	0
All of the above	5	0	3

Conclusions: The present study was undertaken to understand the different credit risk management practices followed by banks. To achieve this purpose data was collected on majority type of risk faced by select banks and understand the credit risk management tools and policies followed by banks. It also

studies how a bank assesses the creditworthiness of their borrowers and the amount of loss suffered due to credit risk. From the analysis it is learned that, the Public and the Private sector banks on an average demonstrate a higher awareness of the three main risks faced by the banking industry. However due to localize character of the Cooperative banks, not-so professional management reflects lack of general awareness on the type of risk faced by them. It is also found from the survey conducted; that all banks from sample, face credit risk, hence banks should apply risk management tools and technique to control credit risk. Results also shows that, compared to operational and interest rate risk, there is increased awareness of credit risk among the banks. Hence all the banks from sample have credit risk management committee and follow credit risk policy, and checks creditworthiness of borrower, however some of the co-operative banks are not following rating tool before granting loan. It is suggested that to cooperative to undertake precautionary measure before granting loan. It has been observed that public sector banks are major victim for credit risk as they suffer loss of 10 lakhs per year due to credit risk; hence they should take appropriate measure to reduce this loss in future. All the banks also take reasonable steps to measure the creditworthiness of the borrower. Present study covers sample of 30 banks, however it can be extended to more number of banks. Study can be further extended to understand models followed by bank for credit risk measurement

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