THE ABSTRACT OF THE Ph.D. THESIS

ON
“The investigation of Risk Analysis and Risk management in selected branches of Cooperative banks in Pune”

Submitted to the
University of Pune, Pune
Faculty OF Management
For the Ph.D. Degree

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OCTOBER 2007
1. Introduction

In view of growing complexity of banks’ business and the dynamic operating environment, risk management has become very significant, especially in the financial sector. Risk at the apex level may be visualized as the probability of a banks’ financial health being impaired due to one or more contingent factors. While the parameters indicating the banks’ health may vary from net interest margin to market value of equity, the factor which can cause the important are also numerous. For instance, these could be default in repayment of loans by borrowers, change in value of assets or disruption of operation due to reason like technological failure. While the first two factors may be classified as credit risk and market risk, generally banks have all risks excluding the credit risk and market risk as operational risk.

Risk Analysis, in a broad sense, is any method — qualitative and/or quantitative — for assessing the impacts of risk on decisions. Myriad Risk Analysis methods are used that blend both qualitative and quantitative techniques. The goal of any of these methods is to help the decision-maker choose a course of action, given a better understanding of the possible outcomes that could occur.

Risk Management is the application of proactive strategy to plan, lead, organize, and control the wide variety of risks that are woven into the fabric of an organization’s daily and long-term functioning. Like it or not, risk has a say in the achievement of our goals and in the overall success of an organization.

There are many method for investigation of risk management in this research we used statistical analysis. For data analysis we used rating method for calculating of risk and statistic method for testing hypotheses. For Reliability analysis of Scale we
used ALPHA Reliability Coefficients\(^1\). Also we used t-test analysis for testing equality of means and Levene’s Test for testing of equality of Variance within banks and risk factors. Analysis of variance, or ANOVA, is used for testing differences within and between several group means of risk in selected banks and differences within and between means in risk factors.

2. **Purpose of the research**

Risk Analysis and Risk Management has got much importance in the Indian Economy during this liberalization period. The foremost among the challenges faced by the banking sector today is the challenge of understanding and managing the risk. The very nature of the banking business is having the threat of risk imbibed in it. Banks’ main role is intermediation between those having resources and those requiring resources. For management of risk at corporate level, various risks like credit risk, market risk or operational risk have to be converted into one composite measure. Therefore, it is necessary that measurement of operational risk should be in tandem with other measurements of credit and market risk so that the requisite composite estimate can be worked out. So, regarding to international banking rule (Basel Committee Accords) and RBI guidelines the investigation of risk analysis and risk management in Co-Op banks is being most important. Therefore, the overall purpose of the research is “to investigate risk analysis and risk management in selected Co-Op banks in Pune”.

3. **Objectives of the research**

Objectives of this research are verifying the integrity of internal risk management systems. During the verification process, we will test independently in

\(^1\) Cronbach’s alpha
proportion to the risk. We will validate periodically; all key control functions within a bank, even those designated as low risk.

Beside the general purpose of the research, the following specific objectives have been mentioned in the research:

- Perform sufficient testing to verify the integrity of internal risk management systems.
- Identifying significant risks.
- Quantifying the risk.
- Evaluating management’s and the board’s awareness and understanding of the significant risks facing in the banks.
- Recommend action plan for reducing risk.

4. Questions and Hypotheses of the research

According to the objectives of the research, the present research is probing to find the answer of the following questions:

H1: There is meaningful relation between risk of credit, market and operational risks.
H2: There is meaningful deference between banks in level of risk.
H3: There are meaningful differences by the weight of risk factors between cooperative banks in Pune.
H4: The major amount of risk is in the operational risk.
Q1: What major risks (stemming either from its products or from the environment) does the bank face?
Q2: How is the risk in current operations identified?
Q3: What actions are available for reducing risk?

5. Methodology of study

5.1 Questionnaire Structure

In this research we used standard questionnaire for self assessment of risk in banks (the IRAF: QUESTIONNAIRE FOR SELF-ASSESSMENT) which is the questionnaire on risk management guidelines in banking system. The structured interview questionnaire is driven by using the most important factors in risk analysis and risk management in banking system from literature review. The questionnaire was developed with guidance of research guide and discussion of some experts and professionals in risk management. The questionnaire was tested by contacting with some banks for clarity, ease of use, and value of the information that could be
gathered. The structure of the questionnaire and format of the interviews is broken down into the following major sections:

- General or basic information
- Board and senior management outlook
- Market Risk Management
- Credit Risk Management
- Operational Risk Management
- Liquidity Risk Management

We used a combination method include false/true, Likert and semantic scales which, the false/true is used for filtering, semantic scale for grading of each variable and question in selected bank and Likert scale for weighting the variables and questions in general.

5.2. Population and Sampling method

The list of Population of Cooperative bank is taken from cooperative banks association and there are 57 banks in list. The list is grouped area wise in 15 groups. The stratified sampling method is used in first stage and the analysis is done on elements within strata by using random simple sample method which covered about 43% of population.

5.3 Data Analysis

For data analysis we used rating method for calculating of risk and statistic method for testing hypotheses. For Reliability analysis of Scale we used ALPHA Reliability Coefficients\(^1\). Also we used t-test analysis for testing equality of means and Levene’s Test for testing of equality of Variance within banks and risk factors. Analysis of variance, or ANOVA, is used for testing differences within and between several group means of risk in selected banks and differences within and between means in risk factors.

6. Scope and limitation of study

\(^1\) Cronbach’s alpha
In this research, we investigated risk analysis and risk management in selected Co-operative banks in Pune.

Operational risk is one of the important risks in bank and secondary data not enough for this kind of risk analysis, therefore we need to fresh data and difficulty of data collection was one of the limitation of our study. Lack of risk analysis and risk management department and lack of experienced member in some banks was another problem in this research. Once more is not cooperating of some bank to taking time to answer the questionnaire.

7. Chapters Scheme

This research includes five chapters which are described briefly as below:

Chapter 1: Introduction

In this chapter we dealt with introduction of research, purpose of study, objective of study, questions and hypotheses of study, methodology of study, scope of study, observation and finding of study.

Chapter 2: Literature review

In this chapter we surveyed and abstracted academic journals, conferences proceedings, technical reports, books, etc. depending on the nature of the risk management problem in banking system.

Chapter 3: Theoretical background

In this chapter that includes 11 sections we went through to concept and methods of risk analysis and risk management by attention to Basel Committee Accords and RBI guidelines for risk analysis in banking systems. Sections of this chapter are described as bellow:

Section 3.1: Cooperative Banking
This section include brief historical description of cooperative banks in India, Urban Co-operative Banks, Rural Co-operative Credit Institutions, NABARD and the Co-operative Sector and Revival of Rural Co-operative Credit Institutions

Section 3.2: Introduction to Risk Management

It describes risk management in banking system. This chapter refers to introduction to risk management in banking system and include some definitions and declaration of objective of risk management, reviewing of risk management methods, explanation of risk management cycle, presses and structure, RBI guidelines in risk management.

Section 3.3: Basel Committee Accords (BCA)

This chapter includes a brief historical review of BCA and its importance, objective of BCA, key elements of Basel II, main step of implementation of Basel in Indian banking system.

Section 3.4: Operational Risk Management

This chapter deals with operational risk management and include: Background of operational risk, operational risk definition, dimension of operational risk, the main steps for operational risk management, RBI guidelines for operational risk management, Basel Committee recommendation for operational risk management, quantifying capital for operational risk, techniques for measurement, management and mitigation of operational risk, a general keys to effective operational risk management and mitigation.

Section 3.5: Market Risk Management

This chapter is devoted to explaining the details of the three common approaches to calculating VaR: Parametric VaR, Historical VaR and Monte Carlo VaR. It also include meaning of market risk, specification of market risk factors,
market-type risks, regulation of market risk in bank, market risk management techniques, the base internal model approach, the pre commitment approach, market risk management structure.

**Section 3.6: Credit Risk Management**

This chapter discusses the sources of credit risk and how measurement is used to manage the risks. Types of Credit Structure, objective of credit risk management, difficulties in credit risk management, steps for managing credit risk, credit risk environment, credit risk strategy, credit risk policy, instruments of credit risk management, RBI guidelines for credit risk rating, credit risk management techniques.

**Section 3.7: interest risk management**

This chapter includes a summery of interest rate risk management classification of interest rate risk, source of interest rate risk, RBI supervisory guidelines in interest rate risk, interest rate risk measurement techniques, Basel committee guidelines and principals in interest rate risk management and its applications.

**Section 3.8: Asset liability management (ALM)**

This chapter deal with asset and liability management (ALM) which discusses about nature of ALM, objective of ALM, help of ALM, previous research about ALM, general ALM approaches at the country level, proactive ALM at banks, ALM in Indian banking system, ALM organization, ALM process, general analytical framework for ALM, integrated ALM approach, advantages of the integrated ALM approach.

**Section 3.9: Non performing assets**

Discuss with Non-Performing Assets (NPAs) which include: an introduction to NPAs, Indian economy and NPAs, global development and NPAs, meaning of
NPAs, asset classification, NPAs in Indian banking system, RBI guidelines for interest income on NPAs, RBI guidelines on provisioning requirement of bank, credit risk and NPAs, high cost of funds due to NPAs, asset management and NPAs.

**Section 3.10: Foreign Exchange Management:**

This chapter describes the key element of foreign exchange management and also the major risk in foreign exchange dealing, which include: open position risk, cash balance risk, maturity mismatches risk, credit risk, country risk, overtrading risk, fraud risk and operational risk. Finally chapter refers to Basel Committee and RBI guidelines and recommendation for internal control over foreign exchange business of the banks.

**Section 3.11: New technology and its risk in banks**

This chapter deals with new technology and its risk in banks and address technology risk management and its implementation. This chapter includes an introduction to technology risk and its importance, technology risk management process, measurement and monitoring performance, auditing, Internet banking risk, risk management tools for managing technology risk.

**Section 3.12: Value At Risk**

As the Value At Risk (VaR) method is using for calculating the most kind of risk in banks and financial institutions, in this chapter we deal with concept of VaR and its applications. This chapter includes: Introduction to VaR, meaning of VaR, VaR parameters, Use of VaR in Risk Measures, Determining of VaR, three main approaches for calculation of VaR, Risk Metrics, VaR for Indian Banks.

**Chapter 4: Methodology of study**

This chapter covers methodological aspect of research and includes population and sampling methods, data collections tools, data analysis methods
Chapter 5: Data analysis

In this chapter we have result of data analysis which includes, reliability Coefficients, Descriptive Statistics description, One-Sample Test, Paired Samples Correlations, Paired Samples Test, Analysis of variance, Post Hoc Range tests

Chapter 6: Conclusion and recommendations

This chapter deals with brief conclusion of thesis and description of finding of study and presenting some useful recommendation for well management of risk in cooperative banks.

8. Major finding of study

According to the plan of the research, the obtained data from primary and secondary sources was analysed in chapter fourth and was observed that there is major differences in risk level of cooperatives banks.

A survey was also executed to evaluate the issue of risk management in cooperatives bank based on the mentioned objectives and questions of the research. The major findings of the survey are as follows:

8.1 Results of analysis false/true section of questionnaires represent that 20.2 percent of respondents not applied the factors relating to the several aspect of risk analysis in cooperative banks. In evaluating them on average % 79.8 found it important.

8.2 The analysis of the result of this study indicates that 97.3% of respondents find that researcher’s risk factors are very important in general, and 2.0 percent find it important. It shows that we used right variables to investigation of risk problem in cooperative banks.

8.3 Respondent opinions shows the risk factors related to 11.9 % oversight of risk factors by board of director (BOD) oversight, 35.1% to credit risk, 12.5%
to operational risk, 23.8% to market risk and 16.5% to liquidity risk. It shows the credit risk and market are very important to cooperative banks.

8.4 The result shows that there are meaningful differences among the average of credit, market, liquidity and operational risk with T value of 149.75 and Sig. 0.000.

8.5 T value of 1175.72 by Sig. 0.000 represent that there is meaningful differences by the weight of risk factors between cooperative banks in Pune.

8.6 The Paired sample Test with t value of 105.506 and Sig. 0.000 shows there is meaningful differences between cooperative banks by all kind of risk.

8.7 The result of ANOVA with F value of 23.383 and sig. level of 0.162 shows there is meaningful differences within cooperative banks in Pune by the credit risk.

8.8 The One Sample Test with t value of 23.44 and Sig. 0.000 shows there is meaningful differences between cooperative banks by the all kind of risk.


- The results study indicates that that 20.2 percent of risk factors is not applied cooperative banks and it shows that there is a big gap between theory and practice for reduction risk in cooperative banks in Pune.

- 97.3% of respondents find that risk factors are very important in general, but for reduction of risk facing in cooperative banks they do not apply risk management techniques. Although RBI has issued Basel guide line for reduction of risk problems.

- A properly structured risk identification, analysis, and mitigation process can moderate the risks associated with cooperative banks and it need to develop properly educational programs and work shops.
• The investigation represents that there is no enough data and useful data system for facing with risk management in cooperative bank, and the risk management process should capture usable data and be kept as simple as possible.

• Documentation is critical, and properly recording the identification, analysis, and risk mitigation plans and results for each risk element allows for lessons to be learned and actions to be taken if necessary.

• Finally, the analysis shows that more bankers cover only credit risk by using simple methods, it represents need of study to develop other kind of risk analysis methods in cooperative banks.

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