RESEARCH PROJECT REPORT

"ANALYISIS OF CREDIT RISK MANAGEMENT IN INDIAN BANKING SECTOR"

FOR THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF

MASTERS IN BUSINESS ADMINISTRATION (FM)

UNDER THE GUIDANCE OF:

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This study is an important part of our MBA program and to do this project in a short period was a heavy task. Intention, dedication, concentration and hard work are very much essential to complete any task.

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DECLARATION

I, YASHI SHARMA, admission no. 18GSFC2020016, student of School of Finance and Commerce, Galgotias University, hereby declare that the project report on "ANALYISIS OF CREDIT RISK MANAGEMENT IN INDIAN BANKING SECTOR" is an original and authenticated work done by me.

I further declare that it has not been submitted elsewhere by any other person in any of the institutes for the award of any degree or diploma.

Name and Signature of the student:

YASHI SHARMA

CERTIFICATE

This is to certify that the report titled **"ANALYSIS OF CREDIT RISK MANAGEMENT IN INDIAN BANKING SECTOR"** has been prepared by **YASHI SHARMA** under my supervision and guidance. The project report is submitted towards the partial fulfilment of 2 year, Full time MBA (FM).

Name and Signature of Faculty

Ms. Viveka Rohilla

CHAPTER - I

INTRODUCTION

Banking has become as park for the current lucrative development of the nation Banks are playing a vital position in advancing the economic and social life of the nation. Banks are not only the ware house of the nation's prosperity instead they are pool of resourcesthatarerequiredforfiscal growthofthenation.Aneffectivelendingsystemisrequiredtoprovidefinancialopportunitiesforarisinglevelofeconomicactivity.Thus,bankinginstitutionsoccupyakeypositioninarecenteconomyour bankingindustryisexclusiveandmaybehasnocorrespondencewithinthebankinghistoryofanynationintheworld.

Thebankingsystemhadmaderemarkableevolutionever sinceindependence.Ithasseenanumberofphasestillnow.Thesephasesaredividedinthefollowing3categories:

1. Firstphase:Phaseofbankingconsolidation(1948-1968)
2. Secondphase:Phaseoftransformingbanking(1969-1991)
3. Thirdphase:Phaseofprovidentbanking(1991-onwards)

Financialsectorreformsfamiliarizedin Indiaininitial1990directedtowardsamoreaggressivepathforthebankingsector.Think about the ever-increasing cutintheyieldandviability inthefiscalsphere,theGovernmenthaddecidedtoreframethefinancialsectortoinspiregreatercompetitionandefficiencyintheirworkingtorejuvenatingtheirprofitability.Themajorstepsofthefinancialsectorreformstakenin1991weretowardstheoverallimprovementin the construction of monetary policy,rejuvenatingfinancialbodiesandsteadilymixingofournation's financialsysteminto the world'sglobaleconomy.Withinthesefar-reachinggoals,thebankingreformsactionsfallintothevarious categories:

- Measuresaimedatremovingtheexternalconstraintsaddressthe'efficiencyofthebanks;
- Measuresaimedinimprovingthefiscalsituation ofthebanksthroughtheinductionofsuitablepracticalnorms;
- Measuresaimedatformingfinancialbasefortofortification of audit,andtechnology;
- Measuresaimedinmodernizationofthemanagerialcompetencescaleandthehuman resources,and
- Measuresaimedatinstitutionalrejuvenatingincludingimprovingthesystemscompatibility.

Therefore,themainmotiveofthecurrentsurveyistointerprettheinfluenceoffinancialreformsontheoperationalefficiencyandprofitablenessofregularbusiness.InIndia,aradicalrestructuringofthefinancialset-upconsistingofbusinessliberation,reliefofpolicies,publicenterprisereform,taxationreforms,businessrelaxationandfinancialsectoralterationthat havebeencompelledfrom the time of1992-93.

Thegovernmentappointedacommitteeforthefinancialset-upbeneaththepositionofM.NarasimhaminAugust1991thatdelivereditsreportonNovember16,1991,whichwaspresentedintheparliamentonDecember17,1991,isalandmarkdocum entandhasinfluencedthebankingsectorreforms.Acompleteset ofreformmeasures that aresuggested bytheNarasimhamcommitteeturnedouttobewatershedinthenon-interferenceofthefinancialsector.Thecommitteesuggestedhuge-rangingreforms,tointendinterlaid,reductionintheanticipationofbank'smeansintheformof SLRandCash reserve ratioandintheproportionofabsorbed credit,non-interferenceofinterestratesandterminatingbranchlicensingpractice thatregulatedentryintobanking.ThebenchmarkssetinthereportoftheNarasimhamcommittee(NC-1)wastobroughtcertainrevolutionarychangebyprovidingtheparadigmshiftfromtheimmenselycontrolledonetomarketedone.TheapproachofNC-1wastomakesurethatthetechniquecarries outonthebasisofworkingflexibilityandautonomyso astoenricheffectiveness,profitability,andproductivity.Up to1997theaimofthese reformswastotrigger outthesubjective deductionintheworkingoftheIndian bankingsystem.

Thegovernmentselected ahighlevel“CommitteeonBankingSectorReform”leadbyM.Narasimham(NC-II,1998)toassess theexecution ofthereformsuggestedbythepreviousgroup andtoseeforward andplan thenecessary reformsinthecoming time tobuild Indianbankingsturdyandcapabletowork effectivelyduringquickever-changingsurroundings.

Thecommitteedrew acompletestructure tocombinethosebenefitstorejuvenatetheprocedurewiththepurposefulregulationsandrobust &efficient

legalsystem.Aremarkablesteptakeninthatpathhadbeentheexerciseofcross-borderacceptedstandardsforcapitaladequacy,provisioning,asset categorization andincomerecognition.

NPAsaremainfearforbanksinIndiaasitrevealstheperformanceofthebanks.FallinNPAproves thatbankshaveimprovedthe creditappraisalactivitiesthroughtheyears,andontheotherhandtheriseinNPAsshowstheneedtoraiseprovisions,leantothenegativeimpacton the profitabilityofbanks.

Recently Indian banking segment is confronting a problem of rise in NPAs. The NPAs of public sector bank are seems to be higher than the private sector bank. To carry potency and profit of bank; NPAs should to be guarded.

On 23rd April, 2004 RBI made an announcement that the banks will notgive dividend of higher than 33.33% of its net profit. The eligibility to declare dividend without taking prior permission from RBI are: NPAs are equal to or less than 3% and Capital Adequacy Reserve Ratio is more than 11% since last 2 years. The banks should maintain provision from its profits so that NPA level is maintained below 3% of their credit.

1.2 DefinitionofNPA

An asset that stops banks from generating income is called Non-Performing Asset. If in the 2 simultaneous quarters the amount remaining due for the whole year then it is said to be an NPA. It comprises borrower’s delays in paying of interest amount or repayment of principal amount.

CategoriesofNPA

Standardassetis theonethat thebankreceivesinterestin addition to theprincipalrepayment amountofthecredit onaregularbasisfromthecustomer.Thus,thisassetdoesnotcreateanydifficulty intheregular courseotherthanthenatural businessrisk.Iftheinterestamountorprincipalamountexceedsa quarterinthefinancialyearthenitisnotastandardasset.Broadly there are 3 categories of NPA, thesearelisted as below:

- Sub-standardasset
- Doubtfulasset
- Lossasset

Sub-standardasset:Assetthat stays asNPAforgreater than90 days butlessthan12 months inafinancialyear.

Doubtfulasset:Loanisadoubtfulasset if is not paid for more than one year.

Lossassets:Post the audit by internalauditor orexternalauditor orRBIif deficitis detected fromtheassetthenitissaidtobelossassetanditsamounthasnotbeenwrittenoffwholly(i.e.some amountmayberecoveredorsomesalvagevalue)

TypeofNPA

- **GrossNPA**:Thesum ofalltheunpaidadvancesthat arecategorizes asNon-PerformingLoan divided by all advances

$$\text{GrossNPA} = \frac{\text{GrossNPAs}}{\text{GrossAdvances}}$$

- **NetNPA**:WhenprovisionisdeductedfromthegrossNPAamountand that is further divided by all advances net of provisions thenthe outcome iscalled NetNPA

$$\text{NetNPA} = \frac{(\text{Sum ofGrossNPA-ProvisionforUnpaidLoans})}{(\text{GrossAdvances-provision})}$$

1.3 FactorstendstoincreaseinNPA

Thebankingsectorhasbeengoing throughsomanyproblems from yearsduetoriseinNPA.But as per the research NPA in the public-sector banks are comparatively high as compared with private sector banks and foreign banks. Below are the factors which are responsible for the rise in NPA:

Externalfactor

a. Futilerecoverytribunal: The Government had opened recovery tribunalthat works to recover the loans, but because of negligence towards their work the banks are not able to recover their dues, therefore it reduces banks profitability and liquidity.
b. WilfulDefaults:Manyborrowersthat arecapableofdoingpaymentbutwilfully donotrepaytheirloanamount.
c. Lackofdemand:Entrepreneursnotable to forecastthedemandfor the product and without knowing the demand theystartproductionthat results inpileuptheirstock hence it is difficult to repay the borrowed amount.Bankstry to recoverthe due

amountbydoing auctionofthese borrower’s assets,the unrecovered amount goes to NPA.

d. ChangeinGovernmentpolicies:Whenthegovernmentchangesin policiesforbanking operationitisnot easy toadapt theprocedureschanges. It often ends up risingofNPA due to procedural complications.

<u>InternalFactors</u>

a. Defectiveprocess of lending:Therearefew fundamentalprinciples oflendingonwhichthecommercialbanksarelendingmoney.These principlesare:
   - Principlesofprotection
   - Principleofprofitability
   - Principlesofliquidity

   The Principlesofprotection or safetymeanthatthedebtorisinaplace topaytheprincipalamount plusthe interestamount.Therepaymentofloandependsupon the debtor’scapacityandkeenness topay.
b. Inappropriatetechnology:Because ofinapt technologyandimproper informationsystem,marketforceddecisioncannotbetakenontherightmoment. Appropriate information systemandaccountingstructure arenotapplied inbanks that resultsinweakcollections.
c. Inadequateanalysis:Due to absence ofSWOT analysis (strength,weakness,opportunityandthreat)of the borrower there is increaseinNPAs.Providingcredit without taking any security against it, thebanks are completelydependingonthetruthfulness, honesty and

capabilityofthedebtor.Hencebankshouldbe very careful while sanctioning the advance and considerthedebtorsowninvestmentandbankshouldalso gather informationofthatdebtorfrom:

i. Other banks
ii. Enquiryfromoutside i.e. market, trade group,industry etc
iii. Creditratingagency

d. Managerialdeficiencies:Whilepickingthedebtor, the banker should beverycarefullyandmust get tangibleassetassecuritycollateral against the credit tosafeguarditsinterests.
e. Irregularity inindustrialvisit:Non-uniformityin the suddenvisitenhances the number ofNPA,alsoduetoirregularity incontinuousvisitbybanker tothecustomer’splace declinesthecollection ofdue interest along withprincipal amount.

1.4 EffectofNPAonBanks

- **Liquidity**

  Ifthebankevaluateslesscapitalthefuturebusinessconcern,whichaffectsthepositionofthebanksandcreatingamismatchbetweentheassetsandliabilityandtheyforcethebanktoraisetheresourcesatahighrate.So,therewillbeanegativeimpactontheprofitabilityofbanks,andtheyarenotabletorecovertheamountfromtheborrower.

- **Funding**

  IncreaseinNPA resultsintheshortageoffundingtoothercandidates.It also affectsadversely stock market.

- **HigherCost**

  It resultsincreaseincostofcapitalofthebank

- **Increase in Risk**

  Whennon-performingasset goes high,it lowersthe profitability;it increases the risk in the businessandworksagainstthebank. Itaffectsrisk bearingability ofthebank.

- **Profitability**

  WhenNPAsareincreasing,theprofitsarereducingandthiswillresultinthefallinthecapitaladequacyratio.Lower ratio puts limit onthecreationoffutureassets.These kindsofbanksconfront complications intheiroperations, growth and expansion.

1.5 Theimpactofcreditriskmanagementonperformanceofpublicandprivatesectorbank

Indianbankshavemovedtheirfocusto“cost”concluded bysubtracting profit from the revenue.It meansevery resourcemust beutilized effectivelytoimprovetheefficiency andbenefits all stakeholders.Topersist inthe long-run,it’svery important tostay focusedoncostsaving.Banksused to focusonthe“revenue” that wasequivalent tocostand profit.Post bankingreformsapproachis shifted towards the“profit”model that meansbanksmeant atprofitmaximisation.

Definitionofvariables

Returnonassets istheratiowhich measuresearningsbeforeinterestandtaxeswhich is called EBITversus itstotalnet-assets.Thisratioismeasured as asign ofcompany’sefficiency; it gives the value that assetsgenerate.The formula of ROA is given below:

$$ROA = \frac{EBIT}{Total\ Assets}$$

This ratio provides indication of capitalstrength;huge investments generally havelowerreturnonassets.

Net Non-performing assets (NPAs) indicatetheactualburdenofbanks.ItistheratioofgrossNPAsless provisiondividedbygrossadvancelessprovisions.

Capitaladequacyratiowhich is denoted by “CAR” measuresthe bank’scapitalarticulated asa%ofitsriskweightedadvances exposure:

$$CAR = \frac{\text{CapitalFund}}{\text{RiskWeightedAssets}}$$

1.6 Limitations of the study

The researcher has limited herself only on the relationship of credit risk management and probability of commercial banks in India. Thus, other risk like interest rate risk, market risk, foreign exchange rate risk has not been covered in this study.

CHAPTER -2

LITERATURE REVIEW

2.1 LITERATUREREVIEW

Withinthepreviouscoupleofyears,variousstudieshavepresented theviewsfor applyingriskmanagementin Indian bankingsector.The summary oflinked such studiesisgiven below.

AnthonyconductedsurveyintheUnitedStatesof America anddiscovered riskmanagementfor credit isthe most appropriate practiceinbanksandmore than 90%bankshaveimplemented thispractice.Improper creditguidelines squaremeasurethemostsupplyofgreatdownsidewithinthebankingsystemasefficientrisk managementhasgathered focusinrecenttimes.Thekey function ofagoodriskmanagementprocedurehave to betoamplify the banksriskadjustedratebykeeping thecreditexposureunder the required limit. Furthermore,bankneed tohandle creditriskwithinthecomplete portfoliobecauseof theriskinvolved ineach loan transaction.Privatesector bankssquaremeasureextra importancetoexecute efficient creditriskmanagementthanpublic sector banks.

Baselstatedthatriskmanagementin credit process insist on thebanktoset up atransparent route togrant newcreditand to give extra time for existingloan.This process conjointly follows examination with care and taking appropriate moves squaremeasuretakentodirect orease therisk ofassociated disposition. Broadstructure andincreased steerageforriskassessmentandmanagementisoffered bytheBaselNewCapitalAccordwhich isinternationally followed.Manycountriessquaremeasureexecuting the“betterwait”andsteady approaches withaccepting huge challengesflashed byBaselII norms.Majority ofnationshasthis inmindtoput off implementation ofBaselIIorchoose easy approachforshaping creditrisk.

Dohertyanalysedthattechnology for credit riskmanagementhasbeenrevamped overthelast10 years.Thespeedofknowledgeflowandthereforethecomplexnessofthemoneymarketscom pelbankstorecognize assess,handle andeliminateriskinanapproachwhich is notachievable a decade back.Currently mostcreditmodellingsoftwareinbasedupon BaselIAccord.Thishasreally beenacore inguiding theforce to buildmodel for creditriskmanagement andcheck for requirements of capitaladequacy.Banksneed tochoose whatis theirriskenthusiasm,howtoallocate theresourcesandhowtocontest ina marketplace. Incompetitivemarketplace,bankstrade-offtheriskthat can be transferredandtry to optimize their portfolio. Though fortheseactivities,banksshould havegood knowledgeaboutmanaging the risk,price the loanproduct in a competitivemarket,monitoreconomiccapital and adjust marginal risk contribution.

Careystatedthatincommerciallending,commercialbankplaysadominantrole.Heanalysed thatinmanycountries,commercialbankdaily do activities for investmentbankingthroughoffering newcredit toconsumers. Method of creditcreationacts swimminglyoncefundssquaremeasureshifted fromfinalsaverstoreceiver.Theresquaremeasurenumerous prospective sourcesofrisk which includes creditrisk, liquidity risk,marketrisk,foreignexchangerisk,interest rate risk andpoliticalrisks.Heanalysedthatriskof credit isthemajor riskencounteredbythe banksandfinancialinstitutions.Theindicatorsofcreditriskembracetheamountofdangerou sloans,problemloansand provisionforloanlosses.Creditriskistheriskin which grantedloan won'tbeeithertotally or partlyrepaidontimeandthere'salways ariskofcustomerdefault.

Muniappansaidthatthe monetaryconstancyisa vital tool for thelong-termsustainablegrowthofthe nation.As the Bankingsystemis theprincipalelementoffiscalsystem so it is essential to pay attention astoprotectitselffromthe overalleconomicshocksthroughsustainingprimeandproper loanportfoliostoattaintheobjective (i.e. easy flow of funds through theforemost money-making channels).TheNPAsweremotilityaheavydangertothecurrent aimoftheindustry.Finally, the conclusion given by the author was thatthe overallandmicrolevel changesanddevotiontohygienicsystemsrelating tobanks,regulator,borrowersandgovernmentwillpermitthesystemtomake free fromNPAsledge.

Prashanth K Reddy wrote in his paper titled as, “A comparative study of Non-Performing Assets in India in the Global context - similarities and dissimilarities, remedial measures” suggested that fiscal reform in Bharat has improved rapidly in the following prospects like charge per unit deregulating, cut in reserve requirement rate, hurdles in entry, sensible standards and supervision based on risk. But the main point of concern is the slower growth in the development of structural-institution. Some modification in the extent of judiciary, organisation and the bureaucracy are required to wrestle the NPAs problem of the country. The overall research is related to how other Asian nations tackle their NPAs.

Sinhaconsideredthethreealternateparadigms–value of risk,expected shortfallandexpectedexcessloss that might beusedtoascertain theregulatorycapital.Furthermore,itoutlinedthescenario of Indianbankingwith respectto capitaladequacyfrom the year 1996-97toyear 2002-03.TheresultalsoshowedthatTier-IcapitalofIndianbanksispositivesignificantly relatedtooperatingefficiencyandhasnegativecorrelation withNPAratio.Butspecific relationshipbetweentheCARandbanksizecouldn’tbearticulated fromtheanalysis.

Literaturefocusedonthedirectionsinthechangesin NPA,itskey causes, effect andimpactofmany NPAmanagementmeasuresandCreditriskinbanks.Italsoshowcasestherelationshipbetween NPA,CAR&ROA.Creditriskistheriskofadepletionwhich resulted fromtheborrower’sfailuretocomplete itsfinancial obligationstotheBankwhendueas per agreed termsand conditions.Riskmanagementof credit inBankisprocessedusingthefollowingprocedures:

- Bringsinplacelimitforoperations in ordertocheck creditrisk
- Bringsinplacesuggestive limitforcreditriskabsorption andthereforetheshareoftheunsecuredloanproduct portfolio
- Formation ofsecurityforcreditoperations
- Lay down priceterms and conditions foroperationswithrespect topaymentforrisks
- Steady observation ofrisksanddoing preparationofmanagementreportingforcreditcommittee,Bank'shigher management andheads of concerned division
- Assessregulatoryandeconomiccapitalrequired toconceal therisk with respectto Bank'soperationsandmaking sure of itsadequacy
- Carryouthedgingoperations

- PropercontroloverBankwithrespecttovigilant rulesonoperationsprocesses, assessmentof risk andprocedure that are taken by managementof autonomous units

TheBank'sriskmanagement forecasts:

i. Put on alogical method toBank'sloanproduct portfoliomanagementof risk andindependent operationwithcertainborrowers or counterparties(theset ofrelatedborrowers or counterparties)
ii. Operate aintegrated methodologyforrecognition andquantitativeevaluation ofcreditriskthat issufficient tothescaleoftheBank'soperations
iii. Appropriategrouping ofcentralizedanddecentralizeddecisionmakingwith respectto operationslinked tocreditrisk.Thekey tooltolimitandmanagethecreditriskbytheBankiscalled creditlimitsystem.Thefollowingsort ofcreditrisklimitsarebuild in:

- Counterpartylimit
- Limitforself-sufficient risktaken bytheBank'sbranch offices
- Set creditrisklimitbycountries or industries or regions

Creditrisk limitssquaremeasureconcluded bycreditcommitteeandagreed bythemanagementboard.Partofauthoritiesforassessment of golfstrokecreditlimitishanded over tobranchcreditcommittees(forcustomercreditoperationsinsidespeciallimitforfreelancec reditrisktaken bythe branch offices)aswellastothesmallcreditcommittee.

CHAPTER- 3

CONCEPTUAL FRAMEWORK &RESEARCH METHODOLOGY

3.1Statement of the Problem

In the recent scenario, the activities of the commercial banks had been overlapped. The rise in financial transaction by the commercial banks increases the scope for the risks. The probability of increase in the possibility of risks has thus been the need for research study and analysis to understand and adopt effective measures for the controlling and keeping it within the acceptable tolerance. The proposed study is therefore an attempt in this direction. Banks were considered as association which attracts the money deposits but the situation is now changed drastically. In today's scenario private sector banks are being introduced for giving number of financial and non financial services. New age banking has made the banking operations complex and complicated environment also insist on appropriate function of the banks which is important for the growth of the industry and economy as a whole.

This study is undertaken to draw various aspects of the public sector and private sector banking. The most important part of the work is to distinguish an impact of credit risk management on performance in public and private sector banks. Study is also conducted to have a comparative study of NPA (non performing asset), CAR (capital adequacy ratio) and ROA (return on assets) of public sector and private sector banks in India.

NPAs are the most important sign of credit risk management. Capital adequacy ratio is scale to measure risk involved in advances. CAR is supposed to perform as a shield against credit loss that is set at 9% under the RBI stipulation. To move towards adopting an International best practice and to substantiate higher transparency, it was decided to implement the ‘quarter unpaid’ norm to identify the NPAs. It was implemented from the year ending March 31, 2004.

3.2Need and Scope of the Study

By going through the expression and analysis of the existing tools for credit risk management in Indian commercial banks and also recognizing the fundamental principles of management theory, every time there is possibility for development and rectification. The need of and in-depth study is strongly felt to be there in the field of risk management and come out with the possible steps for rejuvenating the risk control/management in Indian commercial banks in particular and financial institutions in general.

3.3Purpose of the Research

Banks key function is mediation between those who have funds and those who require funds. For management of various risks like credit risk, operational risk or market risk there should be a converted compounded measure. Hence it is essential that calculation of operational risk must be rope in with calculation of credit risk and market risk, with this required risk estimate can be performed. According to International Banking Rule (Basel Committee Accord) and RBI guidelines the examination of analysis and management of risk in banking sector is the key lever for sustainability and growth.

3.4Objectives of the study

The main motive of the study is to have better picture on the credit risk management of selected private and public-sector banks and its impact on their performance. These are the following specific objectives.

1. To analyse the performance of selected pub
2. LIC and private sector banks.
3. To examine the existing risk management system of selected public and private sector banks.
4. To examine the relation between NPA, CAR and ROA through regression model.

3.5Hypothesis of the Study

Hypothesis 1: Credit risk management have a positive impact on the performance of private sector banks in comparison to public-sector banks.

Therefore, the null (H_o) and alternative hypothesis (H_a) are:

H_o: Credit risk management does not have a positive effect on the performance of private sector banks in comparison to public-sector banks

H_a: Credit risk management has a positive effect on the performance of private sector banks in comparison to public-sector banks

Hypothesis 2: The performance of private sector banks has improved more than in terms of ROA, NPA and CAR in comparison to public-sector banks.

Therefore, the null (H_o) and alternative hypothesis (H_a)

H_o: The performance of private sector banks does not improve more than in terms of ROA, NPA and CAR in comparison to public-sector banks.

H_a: The performance of private sector banks has improved more than in terms of ROA, NPA and CAR in comparison to public-sector banks.

3.6Conceptual Framework

Bankperformance

Performance in banking is measured by thecapability ofbanksinproviding qualityservicestothe customers.Various variables are considered to evaluate the performanceofa bankthese are thekeyindicatorsthat are used inbankingindustry.These indicators are:

- **Profitability**:Effectiveness ofbankswhich is calculated by generated earningslead to Probabilityratiosthat put focusonprofitcapability ofthebank.These profitability ratiosare:ReturnonAssets(ROA) and ReturnonEquity (ROE).
- **Liquidity**:This is measurement of bank's abilitytopay duefinancialobligations.
- **Solvency:**This isthelong term capacity of the bank topayallobligations.Solventbusinesseshavepositivenetworth;these indicatorsare debt to equity ratio and debttoassetratio.
- **LoanProduct Portfolio**:Itisthesum ofloansdisbursed bybanksin a day.Loan portfolio valuedependsontheprincipal,interestrate andthecreditworthinessoftheloans.

Banksprofitabilityanditsmeasurement

Banksgenerate profitthroughearningmorethanthattheypayas expenses.Majorproportionofbanksearningscomefromthefeewhich is chargedforthe servicesanddue interestpayment.The majorexpensesof the banks aretheinterestpaidto customers for the deposits.

Themost important assetofbanksareloansgiven topersons,businessmen andothercompanies,whereas itskeyliabilitiesaredepositsfrom customers andmoneythatthey borrowed eitherfromRBI, otherbanksorthroughsellingcommercialpaperintheregulated moneymarket.Profitabilityis calculated throughROA (return on assets)andROE (return on equity).Profitabilityistaken as thedependentvariableinthisstudy.

Profitabilitymeasuresforbanks

Banksgenerallyusesreturnofasset(ROA)andreturnofequity (ROE)formeasuringtheirperformance.Credit andsecurityis banksassetandis usedtoproduce theirearnings.Though todisburse loanandtoacquire stock,banksshould havemoney that is sourced frombanksownersas bankcapital,fromcustomer’s deposits andthroughsellingtheirsecurities in hand.

ROA(Return on asset) isascertained bythefeewhich itearnsbyprovidingservicesandinterestearned on advances.Interestincomeis dependentpartially ontheinterestspread that isaverageinterestratereceived post that we deduct averageinterestpaidonitsdeposits.

Netinterestmarginindicates that howsuperior thebankisin generating income.Higherinterestincomemarginsdenote that banks are managed very well and it alsoshows betterfutureprospect of the bank.

3.7ResearchMethodologyandFramework

Researchconsistsofdatacollection,analyticaltools,researchdesign,sampleselectionandid entify participantsinthestudy.Thecollectionof data andanalysistools usedforthemodelandthecomponentsofthemodelmeaningboththedependentandindepend entvariablesareexplained.

Datacollection:Studyiscompletely basedonthesecondarydata.Thedatarequired forthestudyis collectedfromthemany sourceslikecurrencyandfinancereports (annualreport),RBI published monthlybulletins,Many reportspublishedbyNationalInstrumentofBankManagement,Banks annual report,ReportspublishedbyIndianBankAssociation(IBA)etc.Thedata is collected for 20Bankscomprising 10publicsector and10privatesector banks.

AnalyticalToolsUsed:Forcomparativetoexaminetheperformanceofselectedpublic sectorandprivatesectorbanksbasedonnon-per0formingassets(NPAs)

- Toanalyse theimpactofcreditriskmanagementinpublicsector andprivatesectorbanks
- ToassesstherelationshipbetweenROA (returnonasset),CAR (capitaladequacyratio)andNPAs (non-performingassets)throughregressionmodel
- To examine theperformanceofthepublic-sectorand private sector banks,correlation, linear and multipleregressiontestwillbe applied

ResearchDesign:Inthisdissertationsecondarydatasourcesaregoingtobeused.Iwillusethe dataof Indian public-sectorand private sector banks.

Thetwoindicatorsofcredit riskmanagementthat impact theprofitabilityofbanksareCARandNPA.

NPA indicateshowbankmanagesits creditrisks.Theresearchisquantitativeresearch,Iusedregressiontoanalysethedataofpublic andprivatesectorbanksofIndia.Dependingontheresultofregressionoutput,analysiswillbe conducted.

Samplepopulationandparticipants:InIndiacurrently therearevarious banks, these banks are chosen as sample for study.

- Public-sectorbanksarenamelyAndhraBank,Allahabad Bank, Bank of India, BankofBaroda,BankofMaharashtra,CanaraBank,CentralBankofIndia,CorporationBank,DenaBankand PunjabNationalBank.
- PrivatesectorbanksnamelyAxisBank,CatholicSyrianBank,CityUnionBank,DCBBank,FederalBank,HDFCBank,ICICIBank,IndusindBank,J&KBank andRBLBank

CHAPTER- 4

Performance of NPAs of public sector and private sector banks

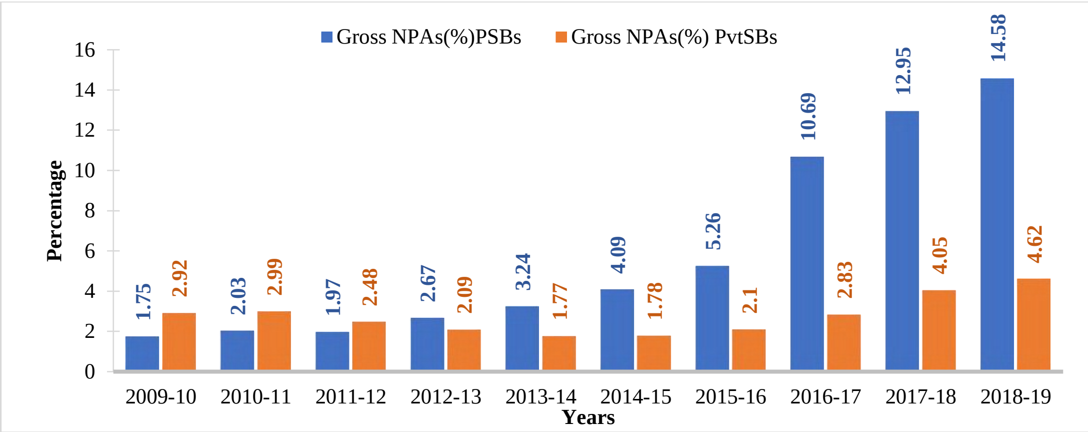
4.1 DataAnalysis

IhadanalysedNPAsofpublicsector andprivatesectorbanksinIndia.GrossNPAsdataof10yearsie.2009-10to2018-19hastakenfromRBIannualfinancialreportasshowninbelowtable.

ComparisonofGrossNPAsofPublicsector andPrivatesectorbanks

Year	Gross NPAs (%) Public Sector Banks	Gross NPAs (%) Private Sector Banks
2009-10	1.75	2.92
2010-11	2.03	2.99
2011-12	1.97	2.48
2012-13	2.67	2.09
2013-14	3.24	1.77
2014-15	4.09	1.78
2015-16	5.26	2.10
2016-17	10.69	2.83
2017-18	12.95	4.05
2018-19	14.58	4.62
MEAN	**5.92**	**2.76**

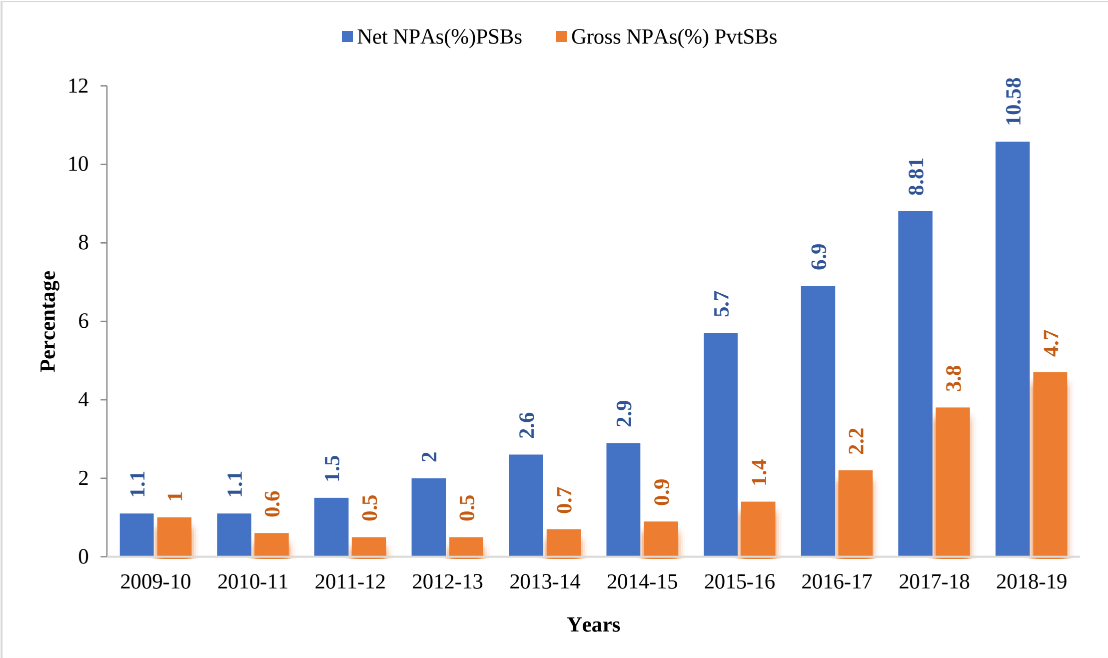
Bar Chart for ComparisonofGrossNPAofPublicsector andPrivatesectorbanks



ComparisonofNetNPAofPublicsector andPrivatesectorbanks

Year	Net NPAs (%) Public Sector Banks	Net NPAs (%) Private Sector Banks
2009-10	1.10	1.00
2010-11	1.10	0.60
2011-12	1.50	0.50
2012-13	2.00	0.50
2013-14	2.60	0.70
2014-15	2.90	0.90
2015-16	5.70	1.40
2016-17	6.90	2.20
2017-18	8.81	3.80
2018-19	10.58	4.70
MEAN	**4.32**	**1.63**

Bar Chart for Comparison of Net NPA of Public sector and Private sector banks



H_1:Creditriskmanagementhasapositiveeffectontheperformanceofprivatesectorbanksincomparisontopublic-sectorbanks.

Therefore,thenull(H_o)andalternativehypothesis(H_a)are:

Hypothesistesting

Hypothesis1	**Result**
H_o:Creditriskmanagementdoesnothaveapositiveeffectontheperformanceofprivatesectorbanksincomparisontopublic-sectorbanks.	Rejected
H_a:Creditriskmanagementhasapositiveeffectontheperformanceofprivatesectorbanksincomparisontopublic-sectorbanks.	Accepted

4.2 Multipleregressionanalysisofpublic-sectorbanks and private sector banks

TheperformanceofprivatesectorbankshasimprovedmorethanintermsofROA,NPAandCARincomparisontopublic-sectorbanks.

Model1Specification

Themodelthat is usedinthisstudyis mentioned below

Y=β0+βF+e--------------------(i)

Yisdependentvariable,βiscoefficientofexplanatoryvariable,β0 is constant, Fisexplanatoryvariableand‘e’iserrorterm(supposed tohave0 meanandindependentin entire timeperiod).Byadoptingthis model specificallyin thisstudy,equation(ii)will become:

Performance(ROA)=β0+β1NPA+β2CAR+e---------------(ii)

ComparisonofROA,NetNPAandCARofPSBs

Year	ROA (%)	Net NPAs	CAR (%)
2009-10	0.97	1.10	13.19
2010-11	0.96	1.10	13.20
2011-12	0.88	1.50	13.42
2012-13	0.80	2.00	12.94
2013-14	0.50	2.60	11.70
2014-15	0.46	2.90	23.41
2015-16	-0.07	5.70	10.68
2016-17	-0.10	6.90	16.92
2017-18	-0.84	8.81	17.76
2018-19	-1.16	10.58	11.21

Theoutputofmultipleregressionanalysisofpublic-sectorbankshasgivenbelow

VariablesEntered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	CAR, NPA[a]	.	Enter

a. DependentVariable:ROA

b. Allrequestedvariablesentered.

DescriptiveStatistics

Parameter	Mean	Std. Deviation	N
ROA	0.2400	0.7622	10
NPA	4.3190	3.4473	10
CAR	14.4430	3.8888	10

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.142	2	2.571	208.784	.000[b]
	Residual	0.086	7	0.012		
	Total	5.229	9			

ModelSummary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	$.992^a$	0.984	0.979	0.11097

*co-relationissignificantat0.5%level(1-tailed)

a. DependentVariable:ROA
b. Predictors:(Constant),CAR,NPA

Correlation

Parameter		ROA	NPA	CAR
Pearson Correlation	ROA	1.000	-0.992	-0.029
	NPA	-0.992	1.000	0.019
	CAR	-0.029	0.019	1.000
Sig. (1-tailed)	ROA	.	0.000	0.468
	NPA	0.000	.	0.480
	CAR	0.468	0.480	.
N	ROA	10	10	10
	NPA	10	10	10
	CAR	10	10	10

ThePerason'scorrelationindicatesthatthelevel ofcorrelationbetweenevery pairofthe independentvariableislowthat imply thenon-presence ofmulti-co-linearityprobleminthemodel.Testis performed at the confidence level of 95%,it denotes thattheabovetestshouldhavep-valuelower than or equal to 0.05tobesignificant.

Coefficients[a](multi-co-linearitytest)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	Beta		
1	(Constant)	1.217	0.148		8.201	0.000
	NPA	0.219	0.011	0.991	20.426	0.000
	CAR	0.002	0.010	0.011	0.221	0.832

a. DependentVariable:ROA

The output of multiple regression analysis of private sector banks has given below.

Credit risk management of the banks has serious impact on productivity. Thus, I analysed many parameters pertain to credit risk-management as it influences bank performance. These parameters are NPAs, CAR, and ROA.

Descriptive Statistics

Parameter	Mean	Std. Deviation	N
ROA	1.3830	0.3009	10
NPA	1.6300	1.4878	10
CAR	14.9470	1.2362	10

Correlation

Parameter		ROA	NPA	CAR
Pearson Correlation	ROA	1.000	-0.899	0.125
	NPA	-0.899	1.000	-0.485
	CAR	0.125	-0.485	1.000
Sig. (1-tailed)	ROA	.	0.000	0.365
	NPA	0.000	.	0.077
	CAR	0.365	0.077	.
N	ROA	10	10	10
	NPA	10	10	10
	CAR	10	10	10

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	CAR, NPA[b]	.	Enter

a. Dependent Variable: ROA

b. All requested variables entered

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967[b]	0.935	0.917	0.08678

a. Predictors: (Constant), CAR, NPA

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.762	2	0.381	50.603	.000[b]
	Residual	0.053	7	0.008		
	Total	0.815	9			

a. Dependent Variable: ROA

b. Predictors: (Constant), CAR, NPA

Coefficients[b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	Beta		
1	(Constant)	3.226	0.420		7.685	0.000
	NPA	-0.222	0.022	-1.097	-9.975	0.000
	CAR	0.099	0.027	0.407	3.702	0.008

a. Dependent Variable: ROA

Hypothesis2:TheperformanceofprivatesectorbankshasimprovedmorethanintermsofROA,NPAandCARincomparisontopublic-sectorbanks.

Therefore,thenull(H_o)andalternativehypothesis(H_a)

Hypothesis	p-value	Result
H_o: The performance of private sector banks does not improve more than in terms of ROA, NPA and CAR in comparison to public-sector banks.	$P<0.05$	Reject
H_a: The performance of private sector banks has improved more than in terms of ROA, NPA and CAR in comparison to public-sector banks.	$p>.05$	Accept

4.3 Findings

- TheoverallstudyindicatesthatNPAofpublic-sectorbankishigher as compared to theprivatesectorbank.Forimprovingtheefficiencyandprofitability,banksarerequiredt omanagetheirNPAs.ItisnotpossibletobringNPAatzeropercentbutbanksshould trytobringitdown aslow as possible.

- ReductionintheNPA ratioofwith change inonly advancesisnotaccurate signofbank performance.Rather,ifthesizeofNetNPAis risingintotal then it is actually not a good sign.TheabovestudyrevealsthatNetNPAiscreditriskmanagementindicators,it isakey forecasterforfinancialperformanceof the banks totheextentof-99%andsucceededbycapitaladequacyratioatthe-.01%andextentof-109.7%andsucceededbycapitaladequacyat-40.7%inprivatesectorbanks.Thestudyshowsthatt-testfortheNetNPAis-22.1%andCAR-37.2%indicates thatthereispositiverelationshipbetweenthe dependentvariableandthe independentvariable.

- ThePearson'scorrelationtestindicatestheunavailabilityofmulti-collinearityinboththepublicandprivatesectorbanks.Itshows thereisapositive relationshipbetweenthe dependentandthe independentvariables.

- Observation of t-test for net NPA of Public sector banks is 20.426 and CAR is .221 which shows that there is positive significant relationship between ROA (dependent variable) and CAR (independent variable). It means that reaction is not statistically significant which suggests that there is relationship between capital adequacy ratio and performance.

- Observation of t-test for net NPA of Private sector banks are -1.097 and .402 which shows that there is positive relationship between ROA (dependent variable) and CAR (independent variable) and inverse relation between ROA and Net NPAs.

- Observation of t-test for net NPA of Private sector banks are -1.097 and .402 indicates that there is positive relationship between dependent variable (ROA) and independent variable (CAR) and inverse relation between ROA and Net NPAs.

- Inthepublic sectorbanksco-linearitytestshowstheobservationoft-testfortheNetNPAis-9.975andCARis-3.702shows significantinverserelationshipbetweenROA (returnonasset)andCAR (capitaladequacyratio).

- Theabovestudyalsoreflectsthatthereisadirectbutinverserelationshipintheprivatesectorbanksbutpositiverelationshipinpublic-sectorbanksbetweentheReturnonassetandnon-performingassetratios.

- Thereisnocorrelationbetweentheindependentvariables(i.e.NPAandCAR)thismeansthatalltheindependentvariableexplainedthedependentvariableindividuallyinpublic sectorandprivatesectorbanks.

- Capitaladequacyratiointheprivatesectorbankishigher.

- Thenull hypothesisisrejectedbecausep-valueislower than0.05

- Therefore,fromtheabovestudyitisclearedthatifIndianbanksmanagetheircreditriskthentheirprofitabilityisalsoenhanced.

- Commercial banks act proactively in identifying, controlling and managing risk by building a sound risk management architecture keeping in mind guidelines issued by RBI and BASEL II. Several measures and initiatives carried out by nationalized and private sector banks in India to identify and manage risks as per norms of Basel II.

- For the purpose of loss data collection. Software like “CORDEX” is being used by Central Bank of India, Union Bank of India, Oriental Bank of Commerce, Canara Bank and “Op Risk Score” being used by Dhanlakshmi Bank.

- It has been observed that almost all banks have put in place Internal Capital Adequacy Assessment Process (ICAAP) to deal with exceptional risks peculiar to bank while others are developing their capabilities to improve risk management process. So overall Commercial Banks in India have developed requisite risk management framework to tackle the risk issue with a view to adopt Basel II in line with RBI guidelines.

Bibliography

❖ **References**

- Asha Singh (2013), “Performance of Non-Performance Assets (NPAs) in Indian Commercial Banks” International Journal of marketing, Financial Services & Management Research, Vol2, NO 9, pp86-94, September.
- Dr. Mohan Kumar &Govind Singh (2012), “Mounting NPAs in Indian Commercial Banks” International Journal of Transformation in Business Management Vol 1, Issue 6
- Krishna A.R., (2016) “An analysis of NPA in Indian Commercial Banks”, Journal of Commerce and Trade.

❖ **Websites**

- http://www.riskglossary.com/link/creditrisk.htm
- http://en.wikipedia.org/wiki/stresstesting.
- www.rbi.org.