An Analysis Of Credit Risk Assessment Models In A Public Sector Bank

[1]Vivek Raj Singh, [2]Dr. Vikash Kumar

[1]Research scholar, [2]Visiting Faculty, [1,2]Mewar University, Chittorgarh, Rajasthan, India.

ABSTRACT - This research paper is aimed in understanding & analyzing the Credit Risk assessment models in Canara Bank from a researcher's perspective with special reference to Small & Medium Enterprises (SME) manufacturing setups. The study is undertaken at Risk Management Section of Circle Office of Canara Bank situated at Meerut (U.P.). The study helped in understanding various parameters on which the banks rate their customers and importance of the Risk assessment as a pre and post sanction exercise for the good asset quality of the bank. It also helped in understanding weightage given to various financial and non-financial parameters of the borrowers and as to how the same affects the 'credit worthiness' assessment of the borrower and charging of rate of interest from him.

Keywords – Public Sectior, Credit Risk Assessment, Bank, Risk Management.

I. INTRODUCTION

Every business or organization is exposed to various risks. While many of them are pure risks like fire, explosion, chemical release, natural calamity etc., some of them can be assessed and predicted. Risk is imminent in every activity and more so in the case of financial sector where one deal with money day in and day out. Out of the common risks of Financial System, the following risks, as defined by BASEL Committee on Bank accords, are more prominent in Banks and need attention and efforts of Bankers for their mitigation:

i. Operational Risk;
ii. Market Risk;
iii. Credit Risk.

Risk management is fast emerging as a science and taking a larger and prominent space in the field of bank management. A structured approach to Risk Management has now become talk of the town and many banks have taken concrete steps for enforcement of the same. Pillar 2-Supervisory Review Process of BASEL II requires the banks to establish an Internal Capital Adequacy Assessment Process (ICAAP) to capture all the material risks, including those that are partly covered or not covered under the other two Pillars. The ICAAP of the banks is also required to be subjected to a supervisory review by the supervisors. The Internal Rating Based (IRB) models are one such ICAAP. The term "rating system" comprises all of the methods, processes, controls, and data collection and IT systems that support the assessment of credit risk, the assignment of internal risk ratings, and the quantification of default and loss estimates.

II. OBJECTIVE OF THE STUDY

This research paper will mainly be dealing with:

i. Study of the Credit Risk, its identification and utility in banks,
ii. Figuring out the factors contributing to various risk grades/ rating of a borrower.
iii. Credit Risk assessment through various Risk Assessment models {Internal Rating Based (IRB)} in M/s Canara Bank with special reference to Small & Medium Enterprises (SME) manufacturing setups.
iv. Establishing a relation between the Risk assessment of a borrower and rate of charged from him.

III. RESEARCH METHDOLOGY

Canara Bank, a nationalized bank, is having its presence in Meerut through a Circle Office overseeing 133 branches (as on March' 2015) spread in 14 districts of West U.P. The Risk Management Section of the bank is visited and various literature regarding Risk assessment and rating etc is perused. The Primary source of data has been the "Journal on CRA of Canara Bank". Also various circulars on Credit rating of the bank have been of prime use for this paper. For knowing the methodology adopted by external rating agencies the "Interview Method" is adopted by holding meeting with rating analysts.

CREDIT RISK & ITS ASSESSMENT

Credit risk is defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms, or in other words it is defined as the risk that a

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firm's customer and the parties to which it has lent money will fail to make promised payments.

Credit Risk Assessment process is a way to quantify the borrower Credit risk by scoring in terms of various parameters with greater reliability and sophistication. The credit risk rating of a borrower is a function of financial, industry, business and management risks. This process helps the banks to get an overview of borrower financial health and chances of loan default.

Indian Banks, alike their global counterparts, have devised their Risk Assessment models for assessing the normal risks involved in their operations. Out of these, Credit Risk Assessment (CRA) models are in place in many banks as a pre sanction exercise for Credit lending and post sanction exercise for renewal or enhancement of limits. These models are used to assess the borrowers on certain parameters and a rating is allocated to the borrower. This rating is then used for:

i. Arriving at applicable rate of interest and other charges for the services offered, i.e. PRICING;
ii. Asset Classification and carrying out portfolio-level analysis and assessing credit quality;
iii. Decision making process for exposure,
iv. Provisioning against the asset in Balance Sheet of Bank etc.

Within each asset class, a bank may utilize multiple rating methodologies/ systems. For example, a bank may have customized rating systems for specific industries or market segments (e.g. Small & Medium Enterprises and large corporate, other way of classifying may be the type of industry e.g. Commercial Real Estate, Trader, Infrastructure, Manufacturing etc). A borrower's rating represents the bank's assessment of the borrower's ability and willingness to contractually perform despite adverse economic conditions or the occurrence of unexpected events. For example, a bank bases rating assignments on specific, appropriate stress scenarios. Alternatively, a bank may take into account borrower's characteristics that are reflective of the borrower's vulnerability to adverse economic conditions or unexpected events, without explicitly specifying a stress scenario. The range of economic conditions that are considered when making assessments must be consistent with current conditions and those that are likely to occur over a business cycle within the respective industry/ geographic region.

In nutshell, the bank performs the entire exercise of Credit Risk Assessment for better profitability by reducing/ avoiding risk and thus reduction in its Non Performing Assets (NPA), one of the key indicator of bank' health. The CRA models and the rating rationale are quite confidential and not disclosed to the borrower. It, however, is open to RBI and auditors and to fellow banks on request basis. The CRA process is an important stage from the Credit risk's perspective of the bank.

TYPES OF CREDIT RATING ASSESSMENT (CRA) MODELS

The concept of risk rating was first introduced in Canara Bank in 2000 as a post sanction exercise for exposures to manufacturing activity with limits of Rs.8 Crore and above. The guidance note of Reserve Bank of India on credit risk management issued in October 2002 prescribed that all the exposures (credit & investment) should be risk rated at the pre-sanction stage. Besides, for the Bank to move to Advanced Approaches suggested by Basel II, it was necessary that all the exposures are risk rated and a history of ratings is built up.

The following Risk rating framework has been introduced in the Bank in 2005:

Exposure Limit #	**Rating Model**	**Developed by**
1. Up to & inclusive of Rs 30 Lac	Portfolio Model	In-house
2. Above Rs 30 Lac & up to & inclusive of Rs 200 Lac	Manual Model	In-house
3. Above Rs 200 Lac	Risk Assessment Model	CRISIL

 # For the purpose of determining the model exposure limit means the aggregate of all limits (both fund based and non-fund based) sanctioned to a borrower.

Table: 1

Risk assessment model are designed to assess Credit risk in a structured and comprehensive manner. It basically takes into account Business risk, Management risk, Financial risk and Industrial risk for making overall risk assessment. RAM also follows "Top Down approach". The upgraded version of RAM now have the additional models supporting risk rating of borrowers belonging to different lines of activities.

The risk weights allotted to each risk category under various models of RAM is as follows:

Model	**Industry**	**Business**	**Financial**	**Management**
Large Corporate Model	10	35	40	15
Large Borrower Trading Model	10	35	40	15
Small Trader Model	0	35	25	40
SME Model	10	30	35	25
NBFC/ Banks/ FI Model	15	30	25	30
Brokers	0	10	50	40
Infrastructure	4	48	28	50
Services	25	20	25	30

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Table: 2

Applicability of the Models: The applicability of different modules in RAM to various categories of account is as detailed below:

Model	Usage of the model
Large Corporate Module - Existing companies - Green field projects - Company with Projects	Manufacturing entity with turnover of Rs.25 crores & more. New projects and Companies where commercial production is yet to start Existing companies which are undertaking new projects.
Large Trader Module	Traders with turnover of Rs.25 Crores and more.
Small Trader Module	Traders with turnover of less than Rs.25 Crores.
SME Module	Manufacturing entity with turnover less than Rs.25 Crores.
NBFC Module	All NBFCs, except Development Financial Institutions (DFIs), banks and other FIs.
Brokers	Borrowers engaged in stock/share broking
Infrastructure	Road, Power and Port- Green field projects and Special Purpose vehicles formed for carrying out these lines of projects.
Real estate developer	All real estate developers
Services	Agencies/ companies in service sector with turnover of upto Rs.25 Crores.

Table: 3

Borrower Rating Briefings:

- BR assessed for Financial Risk, Business and Industry risk, Management risk, Country Risk, Financial Statement quality and Risk score/ Rating transition matrix.
- There are eight rating grades. The nomenclature varies with the model.
- NORMAL RISK, Grade IV is the hurdle grade as per CRISIL's Risk Assessment Model.
- HIGH RISK III, Grade VIII represents the Default grade.
- Borrower rating will be reviewed annually.
- Borrower rating movement would give Probability of Default (PD) associated with a rating grade.
- It gives separate weightage to Existing unit and New unit.
- Units having solicited ratings from recognized External Credit Rating Agencies are eligible for additional score under Borrower rating.
- For units having 25% or more assets/ cash flows originating outside India, Country rating will be integrated with the borrower rating.

Detailed Analysis of Risks: The CRA model for Non trading sector is basically meant for manufacturing companies and is comprehensive and assesses risk based on credit scoring broadly in terms of four parameters namely Industry risk, Business risk, Financial risk and Management risk.

Entry Barrier: All proposals are required to be rated first under two parameters of 'Compliance of Environmental Regulations' & 'Integrity' called entry barriers. A proposal of getting zero score in the entry barriers would not be processed further & would be declined. No deviation is envisaged in the Entry barrier.

1. ***Industry Risk***: Under this parameter, there are ten sub-parameters which help in assessing the sustainability of the company and long term viability of the unit. This comprises qualitative assessments of track record of the industry viz a viz the company. This parameter accounts for 10-25% weightage of the total score (depending on the type of industry) in the borrower rating grade. Various sub-parameters assessed are mentioned briefly as:

- Industry Characteristics,
- Demand Supply Gap,
- Government Policies,
- Input Related Risks,
- Extent of Competition,
- Industry Financials.

2. ***Business Risk*:** Under this parameter there are ten sub-parameters which help in assessing the competence of the company. This comprises qualitative assessments of track record of the company, capacity utilization, user or product profile etc. This parameter accounts for 30-35% weightage of the total score (depending on the type of industry) in the borrower rating grade.

- Operating Efficiency,
- Capacity utilization,
- Availability of Raw Materials,
- Management of Price Volatility,
- Integration of Operations,
- Market Position,
- Distribution Setup,
- Product Range.

3. ***Financial Risk*:** Under this parameter there are thirteen sub-parameters which help in judging the financial risk of a borrower. This parameter accounts for the 30-40% of the total score in the borrower rating. There are seven ratios under which the weights are distributed based upon the latest ratio, average of past three years and industry comparison. Assessment of financial risk involves assessment of size (in terms of Net Worth), profitability, credit protection measures like cash accruals, debt service coverage ratio, working capital management, interest coverage ratios and returns over the capital employed. The various ratios calculated are mentioned as:

- Operating Margins,
- Total Outside Liabilities to Tangible Net Worth,

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- Current ratio,
- Return On Capital Employed,
- Operating Income to Short Term Borrowings,
- PBDIT over Interest,
- Profit After Tax to Net Sales,
- Average year to year growth in net sales in last two quarters is also taken into account,
- Financial Flexibility,
- Future Prospects,
- Qualitative factors.

4. ***Management Risk*:** Management risk basically deals with the management evaluation i.e. evaluation in terms of promoter's competence, their experience, management track record, management's ability to develop suppliers, ability to manage banking and labor relationships etc. The risk assessment is done by the help of eleven sub-parameters. This risk parameter accounts for 10-25% of total weightage of the borrower rating. This rating parameter requires critical assessment of organizational structure of the company and quality of systems and processes.

- Experience in the Industry,
- Managerial competence/ Commitment/ Expertise,
- Integrity,
- Structure and Systems,
- Strategic Initiatives,
- Length of relationship with the Bank,
- Ability to manage change,
- Management Succession Plan,
- Credibility-Ability to achieve Sales/Profit Projections,
- Track record/ Conduct of accounts/ Payment Record,
- Qualitative Parameter/ External Rating.
- Country Risk

A risk transition matrix is drawn which shows the CRA rating for the past three years and comments on the movement of rating and risk scores. Proper reasons are sighted in case of major fluctuation in scores resulting in up gradation or degradation in rating by more than one stage.

CASE STUDY: I

Small & Medium Enterprises (Industrial Accounts):

Name of the Company : M/s ABC (P) Ltd.
Standing : 1994
Constitution : Pvt. Limited Company
Information about Directors : (Rs. in Lac)

Name of the Directors	Age	Educational Qualification	Net worth
A	51	Matric	10.00
B	45	Matric	10.00
C	24	B.Com.	10.00
D	38	M.Tech	-

Table: 4

Activity : Mfg. & supply of stainless steel, vacuum flask, thermo jugs & Casseroles.

FINANCIAL PARAMETERS :

(Rs. in Lac)

	31 03 2014 (AUDITED)	31 03 2015 (AUDITED)	31 03 2016 (ESTIMATES)
Capital	18.00	18.00	20.00
TNW	6.82	-0.04	9.41
NWC	15.10	15.81	9.72
Current ratio	1.27	1.26	1.23
Net sales	119.48	118.92	160.00
NPAT	2.63	-2.40	2.57
Depreciation	1.99	2.08	2.00
Accumulated loss	9.44	12.90	10.34
TOL/ TNW	3.55	-VE	7.44
Inventory & debtors/ sales	160.00	182.00	150.00
Prorata achievement	74.75%	(Rs.119.60 Lac upto Mar'11)	

Table: 5

RATING SHEET OF ABC (P) LTD. – INDUSTRIAL ACCOUNT MODEL

I (1) Management Quality:

S No		Total Marks	Marks Awarded	Remarks
i)	Management Experience	5	4	Technical Director support available
ii)	Succession on planning	3	3	Son is a director and will be able to take over.
iii)	Financial control	4	1	TL sought Rs.26.25 Lac but availed Rs.9 Lac
iv)	Labour relations	3	3	No labour unrest in last 3 years.
	Sub-total (A)	15	11	

Table: 6

I (2) Financial reporting, MIS, Renewal of limits:

S No		Total Marks	Marks Awarded	Remarks
i)	Submission of ABS/ PBS, Renewal papers	5	3	Delay is more than 3 months but less than 6 months
ii)	Submission of feedback data	5	1	Inordinate delay
	Sub-total (B)	10	4	

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Table: 7

I (3) Account behavior/ Track record:

S. No		Total Marks	Marks Awarded	Remarks
i)	Repayment of installment/ int./devolvement of LC/ Cheque/ bill returns/ Transgression	7	2	Delay in payment of interest/ installments/Transgression
ii)	Compliance of sanction terms	5	3	NF 482 not submitted for the sanction dated 12 04 2010.
iii)	Passing of turnover in the account	3	2	Shortfall in turnover is justifiable.
	Sub-total (C)	15	7	
TOTAL SCORE FOR MANAGEMENT QUALITY (A+B+C)		Total Marks: 40	Marks Awarded: 22	

Table: 8 II BUSINESS RISK:

(1) Competition and Market Risk:

S. No		Total Marks	Marks Awarded	Remarks
i)	Competition	8	3	Insignificant market share & poor sales growth
ii)	Industry profile	7	4	Growth potential is marginal.
iii)	Desirability of exposure to the industry	5	2	Industry prospects are marginal.
iv)	Technology development	5	2	Requires attention in the area of technology
	Sub-total (A)	25	11	

Table: 9 (2) Product characteristics:

S. No		Total Marks	Marks Awarded	Remarks
i)	Availability of substitutes/ branded products	6	4	Cheaper import substitutes
ii)	Environmental/ Regulatory Risk	5	5	NIL environmental risk.
iii)	Export potential	3	1	No export but local demand is there.
iv)	Inputs accessibility	6	3	Price increase in RM cannot be passed on.
	Sub-total (B)	20	13	

Table: 10

(3) Customer/ Supplier relationships:

S. No		Total Marks	Marks Awarded	Remarks
i)	Spread of customer and relationship	7	3	Mainly supply is to Army.
ii)	Good long term contracts	5	1	No regular repeat order.
iii)	Marketing Net work	3	1	Marketing requires improvement.
	Sub-total (C)	15	5	
TOTAL SCORE FOR BUSINESS RISK (A+B+C)		Total Marks: 60	Marks Awarded: 29	

Table: 11

III FINANCIALS:

S No.		Total Marks	Marks Awarded	Remarks
i)	Earning/ Growth trends	10	3	No growth in sales/ loss incurred.
ii)	DSCR or Bank borrowing to sales	8	7	23.28%
iii)	TOL/ TNW	8	-	-ve
iv)	Operating PBIDT/ Operating Income	8	-	Loss incurred
v)	Liquidity (a) Current ratio	4	2	1.23
vi)	Achievement of projection vis-à-vis estimates	8	5	74.75%
	TOTAL	50	18	

Table: 12

IV SUMMARY:

S. No.		TOTAL
i)	Score for Management Quality	22
ii)	Score for Business risk	29
iii)	Score for financials	18
	TOTAL	69

Table: 13

LOW INVESTMENT GRADE- LR III

CASE STUDY II:

SME Manufacturing Risk Assessment Model (RAM) Risk Gradation Scale:

Overall Weighted Risk Score Range	**Risk Grade**	**Grade Description**	**Degree Of Safety W.R.T. Debt Serving Capacity**
8.50 - 10.00	SME1	Low Risk - LR3. SME 1 is equivalent to III	The degree of safety with respect to debt servicing capacity is good.
7.50 - 8.50	SME2	Low Risk - LR3. SME 2 is equivalent to III	The degree of safety with respect to debt servicing capacity is good.
6.50 - 7.50	SME3	Normal Risk. SME 3 is equivalent to IV.	The degree of safety with respect to debt servicing capacity is satisfactory.
5.50 - 6.50	SME4	Moderate Risk. SME 4 is equivalent to V	The degree of safety with respect to debt servicing capacity is just adequate and therefore needs close monitoring.
4.50 - 5.50	SME5	High Risk - HR1. SME 5 is equivalent to VI	The degree of safety with respect to debt servicing capacity is inadequate. The a/c needs very close watch & monitoring to effect up-gradation.

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3.00 - 4.50	SME6	High Risk - HR2. SME 6 is equivalent to VII	The degree of safety with respect to debt servicing capacity is poor. The a/c needs very close watch & monitoring to effect up-gradation.
1.50 - 3.00	SME7	High Risk - HR3. SME 7 is equivalent to VIII	The degree of safety with respect to debt servicing capacity is very poor. The a/c needs very close watch & monitoring to effect up-gradation.
0.00 - 1.50	SME8	High Risk - HR3. SME 8 is equivalent to VIII	The degree of safety with respect to debt servicing capacity is very poor. The a/c needs very close watch & monitoring to effect up-gradation.

Table: 14

RATE OF INTEREST: *For Corporate MSME clients*:

Rating Grade	Rate of Interest per annum	Present rate (floating & linked to Base Rate)
Low Risk- LR 1	BR + 2.00	11.65% p.a.
Low Risk- LR 2	BR + 2.00	11.65% p.a.
Low Risk- LR 3	BR + 2.25	11.90% p.a.
Normal Risk- NR	BR + 2.50	12.15% p.a.
Moderate Risk- MR	BR + 3.00	12.65% p.a.
High Risk- HR 1	BR + 4.75	14.40% p.a.
High Risk- HR 2 & 3	BR + 5.25	14.90% p.a.

Present Base Rate of Canara Bank is 9.65%. Base Rate is the respective minimum lending rate of a bank, below which it does not fund.

Table: 16

Sample Sheet for M/s A2 limited:

	Wts (%)	Score	Weighted Score	Final Score	Overall Risk Score
Type : Company					
Industry Risk	10			8.00	0.80
Is the industry susceptible to child labour problems?	20	8.00	1.60		
Impact of government policy	20	8.00	1.60		
Would environmental legislation be a threat to the industry?	20	8.00	1.60		
Level of impact of technology shift on the industry.	20	8.00	1.60		
Demand Supply scenario	20	8.00	1.60		
Business Risk	30			7.64	2.29
Environment Risk	7.5	8.00	0.60		
Raw Material Risk	20	7.30	1.46		
Availability of raw materials	35	8.00	2.80		
Availability of power and other utilities	30	8.00	2.40		
Trend in price of raw materials	35	6.00	2.10		
Market/ Product Risk	20	7.80	1.56		
Foreign exchange risk	5	6.00	0.30		
Extent of Competition	15	8.00	1.20		
Export component in sales	10	4.00	0.40		
Track record of immediate buyer	20	8.00	1.60		
Target market of the entity	20	10.00	2.00		
Position of entity in its target market	20	8.00	1.60		
Fund repatriation risk	5	8.00	0.40		
State of economy of the export country/ countries	5	6.00	0.30		
Labour Risk	12.5	8.00	1.00		
Operational/ Technology Risk	22.5	7.20	1.62		
Capacity utilization	25	8.00	2.00		
Layout specification	10	8.00	0.80		
Trend in cost of maintenance of plant and machinery	15	8.00	1.20		
Status/ Nature of technology used by entity	20	8.00	1.60		
Foreign technology collaborator	10	0.00	0.00		
Rejection rate in Production/ Sales	20	8.00	1.60		
Customer Risk/ Marketing Risk	17.5	8.00	1.40		
Payment realization	20	8.00	1.60		
Seasonality risk	20	8.00	1.60		
Threat from backward integration of immediate customers	20	8.00	1.60		
Selling Terms and dependency of unit on customers	20	8.00	1.60		
Track recorded of delivery schedules	20	8.00	1.60		
Financial Risk	35			9.60	3.36
Interest Coverage	10	10.00	1.00		

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Total Outside Liabilities to Tangible Networth	20	10.00	2.00		
Networth	10	10.00	1.00		
Current Ratio	20	8.00	1.60		
Return on Capital Employed	10	10.00	1.00		
Net Profit Margin	10	10.00	1.00		
Net Cash Accrual / Total Debt	5	10.00	0.50		
Inventory and Receivables to Sales	15	10.00	1.50		
Management Risk	25			7.36	1.84
Years of existence in the business.	8	10.00	0.80		
Delays / defaults in repaying debt in last 3 years?	20	10.00	2.00		
Financial interaction with group companies	8	6.00	0.48		
Competence / Technical skills of the management	16	6.00	0.96		
Management succession plans	8	6.00	0.48		
Quality of management information system	8	6.00	0.48		
Nature of Management	8	5.00	0.40		
Credentials of the family running/owning the business	8	6.00	0.48		
Ability to meet profit projection	8	8.00	0.64		
Legal Proceedings against company	8	8.00	0.64		
OVERALL RISK SCORE					8.29
RATING GRADE		Low Risk - LR3. SME 2 is equivalent to III			SME2
PREVIOUS RATING GRADE		Low Risk - LR3. SME 2 is equivalent to III			SME2

Table: 15

IV. COMPARATIVE STUDIES OF RISK RATING MODELS

CANARA BANK	CRISIL	ICRA	CARE	BRICKWORK
SME evaluation on basis of Industry risk, Business risk, Financial risk and Management risk	SME evaluation on basis of Business risk, Management risk and Financial Risk.	SME evaluation on basis of Business & Industry risk, Financial risk and Management risk.	SME evaluation on basis of Economy & Industry risk, Business risk, Financial Risk & Management risk.	SME evaluation on basis of Financial condition, Product marketability, Competitive strength, Management measure & Industry conditions.
Absence of Industrial Database.	Industrial Database present.	Industrial Database present.	Industrial Database present.	Industrial Database present.
Computation of profitability ratios, leverage and coverage ratios, and liquidity ratios under Financial risk.	Computation of profitability ratios, leverage & coverage ratios, WC ratios, cash flow ratios and liquidity ratios under Financial Risk.	Computation of profitability ratios, gearing ratios, WC ratios, cash flow ratios and liquidity ratios under Financial risk.	Computation of growth ratios, leverage & coverage ratios, profitability ratios, turnover ratios, cash flow ratios and liquidity ratios under Financial Risk.	Computation of liquidity ratios, profitability ratios, leverage ratios, efficiency ratios and growth ratios.
Eight borrower grades are present.	Eight borrower grades are present for SME.	Eight borrower grades are present for SME.	Eight borrower grades are present for SME.	Eight borrower grades are present for SME.
Financial risk weight is 35% for new connections and 65% for existing connections.	Financial risk weight is 50% for companies.	Financial risk weight is 40% for new connections and 60% for existing connections.	-	-
Eight rating methodologies in place which are for Large Trader, Small Trader, Large Borrower, NBFC, SME, Stock Broker and Infrastructure sector.	Ten credit rating methodologies in place for various sectors.	Thirty two credit rating methodologies in place for various sectors.	Twenty five credit rating methodologies in place for various sectors.	Six credit rating methodologies in place for various sectors.
Modified CRISIL model is adopted in Canara Bank.	CRISIL model for SME is adopted by IDBI bank.	ICRA model for SME is adopted by Bank of India.	-	-

Table: 17

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V. CONCLUSION

After going through the rating methodologies available on internet of some of the external rating agencies like CARE, ICRA and CRISIL for Credit Risk Assessment and also meeting with some of the rating analysts of the bank and these companies, following is concluded:

1) The current CRA models of Canara Bank are developed on MS Excel. Although the software is simple tool but it lacks Graphical User Interface (GUI), data mining, analytical prowess and business intelligence mechanism. The SAS tool for Credit risk management for banking is a better option for automation of CRA process. Some banks like SBI, IDBI, Standard Chartered Bank etc. are using this tool for CRA process. So in case the CRA for Canara Bank gets developed on this platform then there will be many added advantages to the bank. SAS tool is having following features:

a. Accurate risk calculations and flexible reporting: It quickly and accurately calculates current and potential risk exposures, probability of default, exposure at default, credit migration, regulatory capital, risk weighted assets, credit value at risk (CVaR) and economic capital. It also helps to view, validate, audit and customize every step of CRA process.

b. An open, flexible and extensible framework: It extends the value of existing operational systems and applications by allowing user to access data from any source and customizes any risk management methodology based on your requirements.

2) The Risk rating is dependent on various factor broadly classified as Internal and External factors. Internal factors include Inherent business risk related to industry as well as the borrowers interest in the business, financial standing and strength of the business etc.

3) The Risk Rating in case of Industrial loan and advances is directly proportional to the Risk grade of the borrower. **The better the rating, better (lower) would be the Rate of Interest charged.** This is not applicable to the retail lending schemes or Schematic lending such as Housing Loan, Vehicle Loans Education Loans and Mortgage Loans etc.

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