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Assessing Credit Risk in SME: Need to Focus On Credit Rating

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ABSTRACT: India is one of the fastest growing economies in the world and is set to remain on that path, backed by the growth in infrastructure, industry, services and agriculture. To support this growth, credit flow to various sectors of the economy has been increasing but during international financial crisis (2008-2010) hit severely the banking sector in the West, as well as the East and the Gulf countries, mainly due to the relaxed credit policies they were using, in addition to the mismanagement of credit facilities they offered. Credit growth in Indian Banking Sector was also affected. A slackening in the economic growth rate has resulted in both, a lower credit demand as well as a receding appetite on the part of the banking industry, to extend credit.

This paper tries to study the current Internal Credit Rating Framework of Indian Banks and the Credit Rating Models that banks operating in India are using in evaluating SME customers for credit using the 5C's, LAPP, 5P's, CAMPARI and FAPE methods. This paper also highlights the factors which banks are considering while review the SME clients.

Key Words: Credit, Credit Risk, SME, Credit Rating Procedure, Credit Rating Models, Credit Rating Agencies

INTRODUCTION

The worldwide credit crunch, which started in 2006 with sub-prime mortgages in the United States, has highlighted the fundamental importance of the credit decision. This shows that poor lending decisions, whether by a financial institution or a corporate or a bank, can lead to significant losses. What the incredible losses sustained by banks and others caught up in the credit crunch have underlined is the major impact of credit risk and – by implication – credit risk management on the wellbeing and profitability of businesses. Being able to manage this risk is a key requirement for any lending decision. While the credit decision is relatively straightforward in principle (a lender must decide whether to give credit or refuse credit to a potential client), in practice it involves experience. The growth in the demand for credit, however, has led to a rise in the use of more formal and objective methods (generally known as credit scoring/rating) to help credit providers decide whether to grant credit to an applicant [Akhavein, 2005].

OBJECTIVE OF THE STUDY

1. Study the Current procedure of Credit Rating of SME in Indian Banks

2. Suggest Internal Credit Rating Framework for SME in Indian Banks

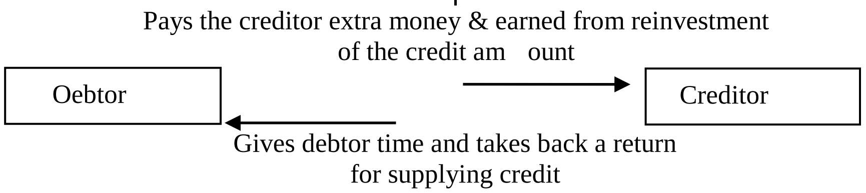
LIMITATIONS OF THE STUDY

1) The study is based on the data published by various Public and Private Banks, IBA and RBI on their websites

2) The study is based only on SME Credit rating section of the bank

WHAT IS CREDIT

Credit is defined by the Economist Dictionary of Economics as "the use or possession of goods or services without immediate payment" and it "enables a producer to bridge the gap between the production and sale of goods" and "virtually all exchange in manufacturing, industry and services is conducted on credit". (Colquitt 2007, 2)



(Relationship between Creditor and Debtor (Adapted from Colquitt 2007, 2)

Consequently, credit generates debt that a party owes the other. The former is called a debtor or borrower. The latter is a creditor or lender. Certainly the debtor will have to pay an extra amount of money for delaying the payment. In that circle, both debtor and creditor expect a return which is worth their paying more and waiting, respectively.

WHAT IS CREDIT RISK?

"Credit risk refers to the risk that a borrower will default on any type of debt by failing to make payments which it is obligated to do". The risk is primarily that of the lender and includes lost principal and interest, disruption to cash flows, and increased collection costs. The loss may be complete or partial and can arise in a number of circumstances.

There are three characteristics that define credit risk:

1. Exposure (to a party that may possibly default or suffer an adverse change in its ability to perform).

2. The likelihood that this party will default on its obligations (the default probability).

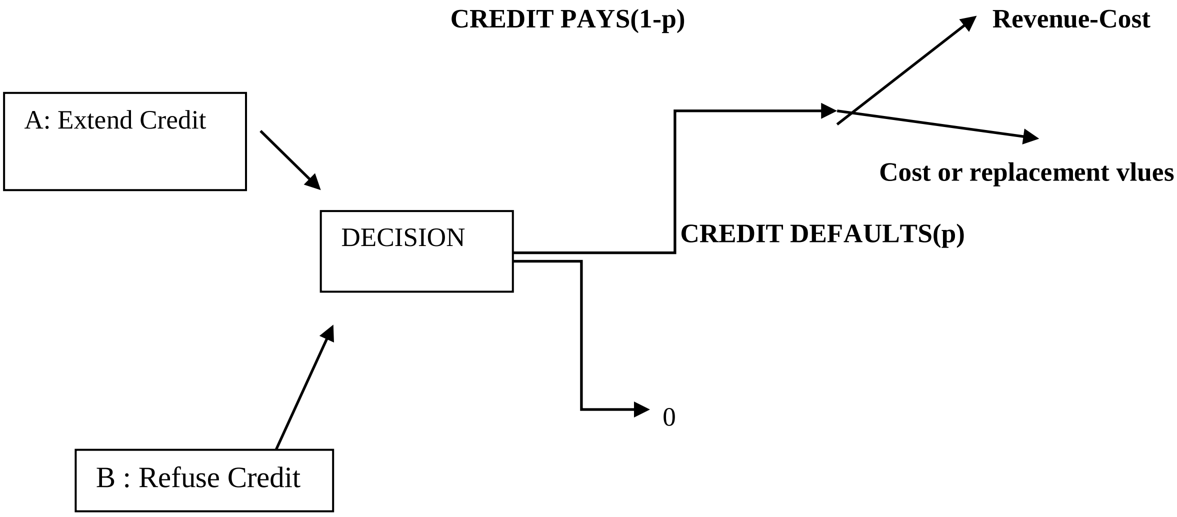
3. The recovery rate (that is, how much can be retrieved if a default takes place). Note that, the larger the first two elements, the greater the exposure. On the other hand, the higher the amount that can be recovered, the lower the risk. Formally, we can express the risk as:

Credit risk = Exposure* Probability of default* (1-Recovery rate)

Credit risk is diversifiable but impossible to fully eliminate and poses significant challenges. It involves the establishment of the distribution of probabilities of default (PD), loss given default (LGD), and credit exposures measured in a portfolio context.

ASSESSING CREDIT RISK

Assessing credit risk requires to model the probability of a counterparty defaulting in full, or in part, on its obligation. We can picture the credit decision in terms of the basic risk management model. This involves a decision either (A) to extend credit, which provides a reward but entails a risk, or (B) to refuse credit. The situation facing the credit manager is shown as a decision problem in below figure. The requirement is to balance the gain from taking the credit risk by extending credit against the potential loss. In the decision problem the alternative is to refuse credit and not obtain any reward.



The credit risk decision facing a firm relates to

(1) the gain if no default happens against
(2) the potential loss from extending credit based on the likelihood that default takes place and the amount that is lost if default occurs.
The probability that the credit defaults is given as (ρ). There are only two possible outcomes: the credit performs according to expectations or the credit defaults. If the credit defaults, the cost to the credit manager will be the cost or the replacement value for what has not been provided.* For instance, in deciding whether to provide trade credit, a firm faces a decision as to which applications to proceed with; what limit to set on the amount of credit extended and whether this needs to be modified over time; what action should

be taken if there is a delay in repayment; and which counterparties should be actively solicited for business.(Ken Brown and Peter Moles 2008)

CREDIT RISK ASSESSMENT METHODS

In order to establish the status of the counterparty, credit analysts will typically use a combination of financial or accounting data and non-financial variables, as well as a number of different models, or analytical tools. Some of the methods involve a subjective approach, such as judgmental methods; others are more systematic in that they use quantitative techniques to evaluate a credit against objective benchmarks. Here are different approaches to Credit Evaluation Process

Approaches	Methodology
1. Judgmental methods	Apply the Credit Manager's experience and understanding of the case to the decision to extend or refuse credit (e.g. lending committees)
2.ExpertSystems(lending Committees)	Use a panel approach to judge the case or formalize judgmental decisions via lending system and procedures
3. Analytic Models	Use a set of analytic methods, usually on quantitative data, to derive a decision
4.StatisticalModels(Credit Scoring)	
5. Behavioral Models	Use statistical inference to derive appropriate relationships for decision making
6. Market Models	Observe behavior over time to derive appropriate relationships for reaching a decision
	Market models Rely on the informational content of financial market prices as indicators of financial solvency

The first method is **expert systems**. These range from the simple judgment of the credit analyst to more formal models. Some of these involve templates or processes. Expert systems or qualitative models are based on judgments as to what constitutes good and bad credit quality. One important area for the use of expert systems is in financial analysis. This is the process of examining the financial statements of a firm with a view to under-standing the nature, activity and risks that are inherent in the business.

In an expert system, the decision to lend is taken by the lending officer who is expected to possess expert knowledge of assessing the credit worthiness of the customer. Accordingly the success or failure very much depends on the expertise, judgment and the ability to consider relevant factors in the decision to lend. One of the most common expert systems is the *five "Cs"* of credit.

The 5 "C‟s" (Domestic and International)] Character, capacity, capital, condition, and collateral are as follows:

1**. Character** refers to a buyer‟s willingness to pay obligations.

2. **Capacity** is a buyer‟s ability to pay.

3**. Capital** refers to a buyer‟s equity and signifies the financial strength.

4**. Condition** reflects buyer‟s economic situations.

5**. Collateral** refers to a buyer‟s access to additional resources to use for payment.

When formalized, the use of expert systems tends to be combined with the second approach, **rating systems**, where the credit quality of a firm or an individual is categorized into a pool of cases that are considered to have the same degree of creditworthiness. For instance, Dun & Bradstreet, the credit reporting agency specializing in analyzing small and medium enterprises, publishes a composite credit appraisal based on firm size (defined as net worth) as a proxy for financial capacity and dividing firms within a given net worth band into 'high', 'good', 'fair' and 'limited' quality. These composite rankings are determined from a range of factors that have a bearing on credit quality, including elements such as number of employees, the firm's payment history and so on.

The **analytic model** approach is based on using financial information and makes use of accounting relationships that, when taken together; provide a picture of the credit quality of the entity. The best-known model of this type is the **DuPont system**, named after the company that developed the approach. At a more systemic and formal level, rating systems develop into the third category of credit assessment method, known as **credit scoring models**. These scoring models provide a rating system that is formalized into a mathematical or statistical model, and all credits are assessed using the same data and methodology. As such, they are more rigorous and transparent in their approach than rating systems that still depend on judgment, although they are designed to provide the same level of decision support.

The statistical model assessment model is based on multivariate statistical inference techniques. In such models a large sample of good and bad credits are analyzed in order to establish a differential equation. The best-known of these models is the **Z-score** method used for predicting the probability of corporate failure based on discriminant analysis techniques. Statistical models are also used in a more general process known as **credit scoring**. The final category of credit evaluation models is **market-based models**. These are formal models, as with credit scoring models, but the information used to determine credit quality is derived from financial market prices. These models make use of the information processing that takes place in financial markets to model the probability of default. For example, if investors have reservations about the future creditworthiness of a particular listed company, they tend to sell the shares. This will have the effect of reducing the share price as these concerns get translated into the market price. A credit assessment model that can capture this effect is using the combined understanding and information processing of all investors in the market. Thus this last type of model uses wider information set than the first three.

Here we study one basic approach to credit risk measurement at individual loan intrinsic level that are used for various types of loans such as commercial loans, project and infrastructure finance, consumer and retail loans. It is **“Credit Ratings”**

WHAT IS CREDIT RATINGS

An assessment of the credit worthiness of a borrower in general terms or with respect to a particular debt or financial obligation. Credit rating is the opinion of the rating agency on the relative ability and willingness of tile issuer of a debt instrument to meet the debt service obligations as and when they arise. Rating is usually expressed in alphabetical or alphanumeric symbols. Credit rating agencies (subsequently denoted CRAs) specialize in analyzing and evaluating the creditworthiness of corporate and sovereign issuers of debt securities. Their role has recently received a boost from the revision by the Basel Committee on Banking Supervision (BCBS) of capital standards for banks culminating in Basel II.

The logic underlying the existence of CRAs is to solve the problem of the informative asymmetry between lenders and borrowers regarding the creditworthiness of the latter. Issuers with lower credit ratings pay higher interest rates embodying larger risk premiums than higher rated issuers..

The processes and methods used to establish credit ratings vary widely among CRAs. Traditionally, CRAs have relied on a process based on a quantitative and qualitative assessment reviewed and finalized by a rating committee. More recently, there has been increased reliance on quantitative statistical models based on publicly available data with the result that the assessment process is more mechanical and involves less reliance on confidential information. No single model outperforms all the others. Performance is heavily influenced by circumstances.

RATING PHILOSPHEY AND PD

The two common philosophies of ratings, one that includes cyclical effects and the other that doesn’t, are mirrored by the two different rating types commonly known as point-in-time and through-the-cycle .Rating system approaches may be characterized as being on a spectrum between:

- Point-in-time (PIT) approaches
- Through-the-cycle (TTC) approaches

In the **point-in-time (PIT)** rating method, risks are evaluated based on the current condition of a firm regardless of the phase of the business cycle at the time of evaluation. A PIT PD is unstressed. PIT rating systems take all cyclical and non-cyclical, systematic and obligor specific information into account. The essential feature of a PIT rating system is that it aims explicitly to forecast default probability over a set period, typically one year (Financial Services Authority, 2005). Under a 100% PIT system, the rating changes as soon as the borrower’s condition changes. Obligors are constantly assigned to new ratings whose PDs reflect the forward looking default likelihood, based on the best available information about their current credit quality. PIT systems are defined by current PD’s that reflect the current creditworthiness of the counterparty.

PIT rating systems are cyclical and forward-looking. In general, PIT ratings tend to rise during economic upturns, as most obligors’ creditworthiness improves and tend to fall during economic downturns.

Through-the-cycle ,In literature, there is no consensus on what is precisely meant by TTC. In this research TTC is defined as a measure of the ability of an obligor to remain solvent at the trough of a business or economic cycle or during severe stress events (Treacy and Carey, 2000). This means that risk default rates are estimated for a borrower’s conditions at the bottom of the economic or industry cycle and under stress. In case the life of the loan is shorter than the economic or business cycle, the term of the loan is used. The ratings are based on a variety of longer-run considerations, financial and non-financial, quantitative and qualitative. The TTC rating methodology requires a separation of permanent and cyclical components in default risk. The essential feature of a TTC system is that it seeks to produce ratings that do not vary with cyclical movements (a cyclical), although the ratings of individual companies will fluctuate due to changes in their own position and prospects. TTC ratings only respond to permanent shocks to the firm, transitory shocks are ignored (Löffler, 2004).

In TTC rating, the rating grades of firms remain the same through the business cycle, but ex-post default rates within the same grade fluctuate reflecting the business cycle (Bank of Japan, 2005). A TTC system can be defined by stable ratings but realised PDs per rating grade vary over the cycle.

BIS SURVEY ON HOW BANK RATING SYSTEM DIFFERS

BIS has conducted a survey where it is found that there is always a difference in Credit rating system among banks. Here is the description below

Mixture of risk factors	Banks appear to consider similar types of risk factors when assigning a credit rating, but their relative importance and the mix of quantitative and qualitative considerations differ between banks, and even between different borrower types within the same bank.
Judgment versus modeling	Banks use different approaches to assign internal ratings. At one extreme are systems focused on the judgment of expert personnel, and at the other those based solely on statistical models. Each will probably require a different approach to supervisory review and validation.
Borrower versus transaction type	The vast majority of banks surveyed assign ratings based on an assessment of the borrower. Approximately half also consider the risk contributed by the specific characteristics of the transaction.
Use of information	The information gleaned from ratings is used in broadly similar processes at the banks surveyed, including management reporting, pricing and limit setting.
Quantifying loss	Data sources and techniques for quantifying loss characteristics per grade (default probability, loss given default, etc.) differ between banks. In addition, in those banks surveyed, they appear to have greater difficulty in attributing loss given default estimates to their exposures than in assessing default probability.
Differing definitions	Data providers and banks use differing definitions of ‘default’ and ‘loss’ in assigning ratings and quantifying loss characteristics, which represent a source of inconsistency and/or measurement error that will need to be considered in the credit risk management process.
Data availability	Data availability remains a challenge to banks’ efforts to quantify risk, although some banks are making progress in collecting and analysing internal data for certain market segments covering the past few years.

Source: Basel Committee on Banking Supervision (2000). Range of Practice in Banks’ Internal Rating Systems. Bank for International Settlements: Basel.)

CREDIT RATINGS AND SME: INDIAN PRESPECTIVE

Credit Rating is the most popular method at present among banks. Rating is the process by which an alphabetic or numerical rating is assigned to a credit facility extended by a bank to a borrower based on a detailed analysis of his character and matching it with the characteristics of facility that is extended to him. The rating carried out by a bank is very much similar to the credit rating carried out by external rating agencies such as CRISIL, ICRA, CIBIL etc. The only difference is that while the rating by the external agency is available in the public domain for anyone to use, the internal ratings carried out by a bank is confidential and is used for specific purpose only. Moreover, the internal ratings of banks are usually finer than the ratings of rating agencies. This is to facilitate better distinction between credit qualities and pricing of loan in an accurate manner.

Credit Rating Agencies in India

Globally, a credit score is an essential part of the banking system and is used for a variety of reasons, including movement of goods and services, purchase of homes and cars, even getting jobs. But in India, it is largely used in the retail lending space that had been growing rapidly until 2007.

Earlier, 13 companies had applied to start credit information bureaus, but the Indian banking regulator has allowed only three—Experian Credit Information Co. of India Pvt. Ltd, Equifax Credit Information Services Pvt. Ltd and High Mark Credit Information Services Pvt. Ltd, besides CIBIL. CIBIL had set up its consumer bureau in 2000 with a database of four million trade records of 13 members, but now it houses at least 135 million transactions of 165 members, spread across banks, mortgage firms and non-banking finance companies. It offers credit scores on every loan, including personal loans. The scores vary from 300 to 900. Currently India have 8 Credit Rating Agencies and these are Credit Enviornment India, ICRA, CRISIL, CIBIL, Experian, Equifax and Highmark and SME Rating agencies of India, each one having some specific area of expertise.

The new methodology being used by CIBIL to calculate the credit score, called the CIBILTransunion Score 2.0, reflects the current credit and borrowing trends. It also introduces a risk index score to rate individuals with a credit history of less than six months. Under the new version, borrowers with less than six months of credit history will be rated on a scale of 1 to 5 on a risk index. This allows banks to classify new borrowers as high risk, with a score of 1 or 2, while low risk gets a score of 4 or 5. Under the new scoring system, -1 or NA/NH will be assigned to individuals who have no credit history or those whose credit history has not been reported to Cibil over the past 24 months.

For consumers with a credit history of more than six months, the credit score 2.0 continues to provide a value between 300 and 900. The closer the score to 900, the lower the risk to the lender. For consumers with a credit history of more than six months, the credit score 2.0 continues to provide a value between 300 and 900. The closer the score to 900, the lower the risk to the lender.

ICICI Securities Ltd has tied up with Credit Information Bureau (India) Ltd (CIBIL) to provide CIBIL TransUnion score and report to over 2.9 million customers of ICICI Direct.Minimum Credit Rating required for considering a new proposal is CR-5 and for take over proposal is CR-4 at present. The cutoff point is changed from time to time depending on bank's requirements by the management. Recently, Canara Bank has launched a credit scoring model for financing medium and small enterprises. The scoring model will reduce the arbitrariness and subjectivity in deciding the eligibility for loans and help in reducing the rejection rate of MSME loan applications. Under this model eligibility is decided based upon aggregate scores secured by the loan applicant on various parameters prescribed under behavioural, management, business and financial aspects. (www.indiainfoline.com may 2014)

As per economics times dt Sep 2014, The Reserve Bank of India (RBI) has formed a working group to examine how customer transaction data in areas such as utility bill payments can be used for signaling credit worthiness. Credit information companies currently rate borrowers by assigning scores using information provided by members such as banks and non-banking finance companies (NBFCs). It has been decided by the Reserve Bank of India to constitute a working group comprising RBI, a member each from TRAI (Telecom Regulatory Authority of India), CERC (Central Electricity Regulatory Commission), MERC (Maharashtra Electricity Regulatory Commission) and all four credit information companies. Having access to other bill payments' history will help credit information companies evaluate a fresh borrower's creditworthiness. An individual who has been regular in paying phone bills or electricity bills in time may be perceived as safe and hence may be able to get cheaper rates. A defaulter may be flagged and the lender will have to be cautious toward loan applications from such individuals.

SME in Indian Economy

In developing countries like ours a typical SME on the contrary is generally family-owned, with centralized decision making almost entirely driven by the promoter without inputs from independent professionals. Sometimes unqualified relatives or acquaintances hold key positions while bringing little value to the venture. The owner’s ill health or demise or even the loss of a competent employee can spell doom for the enterprise, which does not always grow beyond the individuals that set it up. When cash flow forecasts are inaccurate, an SME runs the risk of taking bad decisions inimical to the business, for instance, applying for a larger loan than the business can afford. Moderate setbacks, a wrong decision or two, and/or cash flow problems are often enough to push a small business to closure.

In India, small businesses face risks that large corporate firms also contend with—increases in the cost of overhead, equipment, salaries, and taxes; product obsolescence; or changes in forecasted sales volumes and prices charged for services or products. Strategies of competitors, changes in the local economy or market dynamics, and other shifting trends also present risks. Other risks include damage from fire, water, and natural calamities and intentionally inflicted damage; and the loss of data and property due to theft or machine breakdown that forces work to come to a standstill.

While these categories of risk are similar to the credit assessment frameworks used for large companies, it should be kept in mind that shifts in political and/or policy trends which pose credible risks for large corporations have relatively less impact on SMEs, which operate at a micro level.

It is important that a DCRA, through interactions with the SME management, assesses whether the promoter or management is aware of the relevant risks that the business faces and whether it has taken reasonable steps to mitigate them.

In India, there is a separate rating scale for entities defined as small-scale industries (SSIs) and SMEs. A small enterprise or an SSI unit in India is an industrial undertaking in which the investment in fixed assets in plant and machinery, whether held on ownership terms, on lease, or on hire purchase, does not exceed Rs50 million. Rating agencies in India undertake the SSI rating in association with the National Small Industries Corporation (NSIC) and the Ministry of Micro, Small and Medium Enterprises (MSMEs) supports the scheme. Business entities with investment in plant and machinery between Rs50 million and Rs100 million are typically treated as medium-sized enterprises. In India, DCRAs define enterprises with turnover up to Rs1 billion as SMEs. Larger enterprises displaying the characteristics of SMEs could also be considered under this definition for rating purposes if the entity requires such a rating.

There are two broad categories of customized rating scales for SMEs in India. The one meant for SSI units (as defined by the Ministry of MSMEs) receives support through subsidies from the government. The other rating scale is meant for entities that are not eligible to be called SSIs but still need a customized rating process run for them. This rating process is not supported by state subsidy and must be paid for by the rated entity. If they so desire, SMEs can also get themselves rated on the traditional rating scale of DCRAs, which is typically used to rate large companies, again at their own cost.

In the Indian context, as per Reserve Bank of India (RBI) requirements, the capital maintained by a bank is to be linked to the credit rating of its customers (typically for customers with loan limits above Rs100 million). The higher the rating, the lower the capital that the RBI requires the lender to maintain in its reserves. The corollary to this is that loans considered riskier are mandated to be backed by more capital held in reserves. This is consistent with international banking standards under the Basel II accord.

FACTORS CONSIDER IN ASSESSING CREDIT QUALITY UNDER SME BY INDIAN BANKS

As a business grows, a greater number of exposures are acquired, increasing credit risk. As the scale increases, it is necessary for the firm to consider how concentrated its portfolio of credit customers is. In particular, there are sub-types of credit risk – Business **Risk , Management Risk, Financial Risk, New Project Risk, Economy Risk, Enforcement Risk** and **industry risk** – affect SME's.

Business risk is the possibility of a default on account of circumstances connected with the customer's business activities. Business risk also includes operating efficiency, this is reflected in the unit's ability to maintain and improve its market share and command differential in pricing. In a competitive market, it is critical for any business unit to control its costs at all levels. For SMEs, The second factor i.e. **management evaluation**, which is typically an evaluation of the promoters' competence, is critical to the rating. Unlike most large corporates, which have several layers of professional managers, performance in the case of SMEs often depends on the entrepreneurship and resourcefulness of the promoters.

In assessing a promoter's competence and track record as an entrepreneur, Banks should look at the past performance of the entity and group companies. This provides an insight into the promoter's ability, capital and character to successfully manage the entity through business cycles. In addition, the entity's ability to develop suppliers, integrate with customers, and manage banking and labour relationships, also provide critical inputs to the management evaluation process.

The Third Factor is **Financial risk** where analysis involves thorough evaluation of the financials of the SMEs through a careful analysis of the audited financials and auditor's report and notes to accounts. Ratio analysis, financial disclosures and off balance sheet items and their impact on the profitability is studied and analysed in detail. Further, the source of funding and its impact on the capital employed structure is also analysed. Availability of liquid investments, unutilized lines of credit, financial strength of group companies, market reputation, relationship with financial institutions and banks and enterprise's experience of tapping funds from different sources also play an important role in financial analysis.

The fourth factor includes **risks** underlying **in new projects** include time and cost overruns, non-completion operational risks and market risk. Besides clearly establishing the rationale of new projects, the protective factors that are assessed include track record of the management in project implementation, experience and quality of the project implementation team, experience and track record of the technology supplier, implementation schedule, status of the project, project cost comparisons, financing arrangements, tie-ups with suppliers, market outlook and plans.

The another factor in country risk is **economic risk**, namely the depressed or declining economic stability in a country. In this situation it is sensible to question the quality of loans or credit to such a country and also to implement a limit to any such agreement. In 1997, for example, the South East Asian Crisis meant that both corporations and banks had to revise their policy towards counterparties in the affected countries. Finally, the fourth factor is the **enforcement risk** from the legal system in the debtor country. Because a creditor has to go through a foreign legal system, it has been known for debtors to use their domestic legal process to stall or attempt to avoid paying, claiming that rules from their home country apply. Another important credit risk is **industry risk**, which is a form of concentration risk. This applies particularly when the domestic or international economy is in recession and the poor economic conditions particularly affect certain industries. Industry structure may have credit consequences because of the supply chain within which most firms operate. For instance, a steel producer is involved with car manufacturers. This has two important consequences. If car sales decline, this affects manufacturers of motor vehicle components, together with the car manufacturers. Consequently, a producer with all its output destined for one industry finds it impossible to avoid industry risk exposure to that industry.

RATING PARAMTER	RATING SUB PARAMETER
Industry Risk	Industry Prospect, market Condition, Competitive advantage, Technology, brand, Marketing network etc
Operations and Business Risk	Physical Properties, People, Actions, Process, Purchasing Planning, Performance etc
Financial Risk	Sales Turnover, profitability, Net Worth Interest Coverage, Liquidity, Working Capital Requirement, Inventory management, Payables, receivables etc
Management Risk	Professional Experience, Labor Relations, Professional Qualifications, Financial Discipline of borrowes, Relationship with Bank, Corporate governance etc
Economy Risk	Slowdown in economy etc
Enforcement Risk	Legal systems, political disrupts etc
New Project Risk	track record of the technology supplier, implementation schedule, status of the project, project cost comparisons, financing arrangements, tie-ups with suppliers, market outlook and plans, Time and cost overruns etc

Some Indian Banks are also using five methods of evaluating Credit Risk

Banks do not use all of them together, rather, they use one or two of these methods. Sometimes they use parts of each, depending on their needs. These Methods can be used in addition of above mentioned risk parameters.

5C's	5P's (Developed by Federal Reserve Center 2004)	LAPP (Developed by Benz 1979)	CAMPARI	FAPE
Capital Collateral Capacity Character Conditions	People Purpose Payment Protection Prospective	Liquidity Activity Profitability Potential	Character Ability to pay Margin Purpose Amount Repayment terms Insurance	Liquidity Ratios Profitability Ratios Operations Ratios Debt Ratios Character Credit Record

Each method has its own importance but in India the 5C's method among other methods gain priority for evaluating credit applications .Banks concentrate more on this 5C's i.e. collateral, capital, and capacity, conditions & character of the applicant.

CREDIT RATING PROCEDURE AND INDIAN BANKS

Traditionally in Indian Banks, credit to SME customers was allocated on the basis of purely subjective analysis and opinion of the likelihood or not of a customer paying back a particular facility. This opinion was offered by the Relationship Manager in consultation with Credit Risk, and overseen by the Credit Committee.

As the market grows, approaches were being developed to take a purely objective statistical approach to SME credit rating, for example, the Altman Z-Score and the Moody's KMV model. Indian banks for arrival of overall rating may use multivariate techniques like discriminant Analysis. In these types of techniques Banks combine all various risk factors like Financial, Industry, management etc and also produce PD. Altman Z score model gained popularity among other techniques.

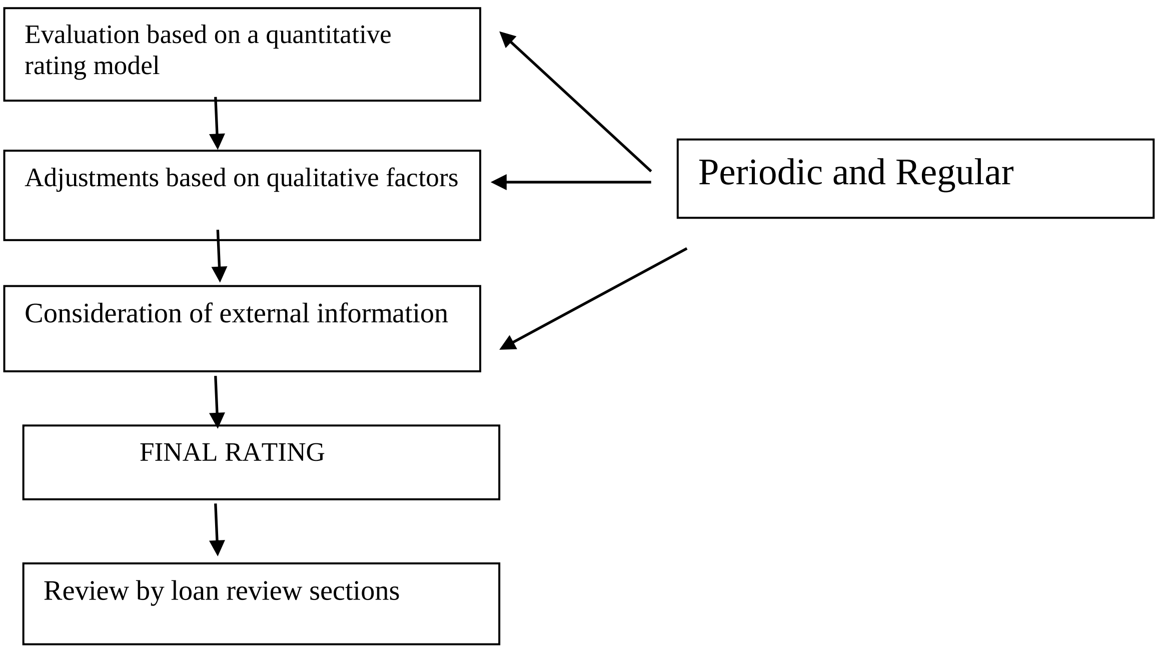
The most Indian Banks uses the Point in Time approach to rate the SME borrower. Through the cycle approach may be adopted by banks for large corporate borrowers which include study of long term Business conditions and financial strategies used by the borrower. Mostly Indian banks using through the cycle approach for loan having tenure more than 3 years and point in time approach helpful in loan like PL, working capital, HL etc

Indian Banks have not paid more attention to scoring of default data on each type of loan. If banks have done so then the data is present in regulatory category. Therefore Indian banks have to start collection and maintenance of data of different loans as per loan performance. Banks must collect data on key borrowers like timing of default, reason of default, identity of default borrowers etc to provide strong and effective support to their internal credit risk rating system. Private sector banks in India, prefers to document their rating systems design and operational process because current credit rating is key to predict tomorrow’s rating of any borrower.

Banks in India review credit rating for select exposures at the time of review, renewal or enhancement or may be yearly or half yearly. Many Private and Public Banks review the rating of SME borrowers at the time of Renewal which may be a year or two year as it depends on the respective bank Renewal credit policy. Majority of Indian Banks Consider Financial Risk Factor as Prime Factor. Every Bank has its own Rating Procedure where Management of Bank decides how much weight should be assigned to which factor like some can assign 40% to financial risk factor, 20 % to Industry risk, and 30% to Management risk.

In India, there are small and large size banks both in Public and private sector. So size of assets and complexity also affects the rating systems employed. Some Indian Banks like UBI, P & S Bank, ,Vijaya Bank basically Smaller size banks are using one rating system and the large size banks like SBI, ICICI, HDFC, AXIS, BOI, PNB are using different rating systems for different types of portfolio and made it transparent .

LENDING SELECTION

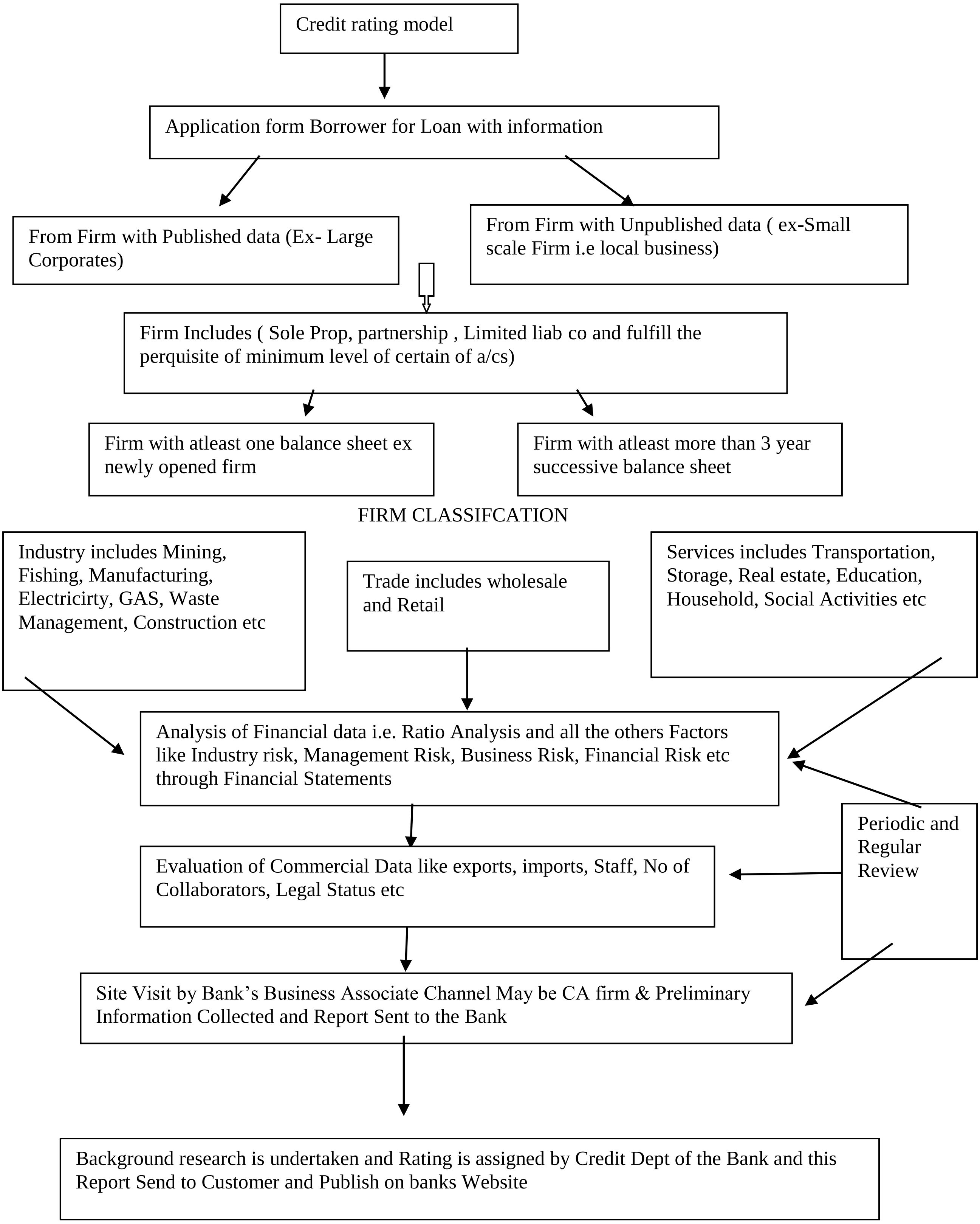


In the process of internal rating, Banks lending sections assign rating in accordance with established policy and procedures. The process and architecture of the internal rating system are (1) documented, for example, in the form of internal rules or manuals; (2) approved by the management; and (3) made widely known to related sections. Important information for designing the system also is made available in written form.

For borrower ratings, grades for each borrower are usually decided based on evaluation using quantitative information, such as financial indicators like size of operation(amount of capital, net assets etc), safety, Profitability(ROE, Operating profits, interest coverage ratio etc) regarding the borrower, and qualitative information, such as industry trends, and extension of financial support from parent companies.

ASSESSING CREDIT RISK IN SME: A SUGGESTIVE INTERNAL RATING FRAMEWORK FOR INDIAN BANKS

A Credit-risk Rating Framework (CRF) is necessary to avoid the limitations associated with a simplistic and broad classification of loans/exposures into a “good” or a “bad” category. Such a rating framework is the basic module for developing a credit risk management system and all advanced models/approaches are based on this structure



For a robust ratings process, 360-degree feedback is sought on a firm from various business partners of the entity. SME ratings business usually ensures country-wide presence through tie-ups with chartered accounting firms which assist in the credit-rating process by undertaking site visits, collecting preliminary information, and providing the base data in the format required by the Banks have to run the rating.

The Rating process takes almost 3 weeks and it can be conducted in parts. Once the information is received from the business associate the Credit rating analyst proceeds with the evaluation of commercial data and analysis of Risk Parameters (Large companies have to prepare annual reports in compliance with regulations and these become reliable performance indicators. Additionally, industry reports and market trends are easily available as the basis for understanding a large company's prospects.)

The assessment of financial variables for firms with published balance sheet has been performed separately as the objective is to test their ability to predict default. For the appropriate assessment of this type of data, financial ratios are taken into account since they offer an objective and homeomorphous way of comparing the financial status of the firm. Financial ratios are classified into the following groups:

1. **Liquidity Ratios**: Current Ration, Acid Test Ratio, Working capital Ratio, Short term liabilities to working capital

2. **Activity Ratios**: Collection period, Payable period, Inventory Turnover, Operating Cycle, FixedAssets turnover, Turnover to Capital Employed

3. **Profitability Ratios**: Return on Equity, return on Capital Employed (Before Income tax & interest),Gross Profit Margin, Net Profit Margin

4. **Viability and Capital Structure Ratios**: Financial Leverage, Total Debt Equity ratio, equity to Fixed Assets

For the firms with published balance sheet which do not meet the minimum restrictions on certain accounts, the assessment is based on financial information such as Net Income before Tax, Shareholders Equity, Financial leverage and Shareholders Equity/ Share Capital.

Credit Risk Analysts generate report and the information received from associates is used to undertake the rating and later on draft rating report is shared with the client, feedback incorporated, and report published. Depending on the credit rating, the outlook of a firm can be: Negative outlook, Positive outlook, under surveillance

While going for Site visit by Banks Business Associate should take Feedback from customers on years of relationship, timeliness of delivery and how commitments have been honored reflects the stability of these relations and the ability of the promoters to scale up the business. Long-standing relations indicate that customers are satisfied with the entity's products or service. The ability to pass on changes in raw material prices is also important as it indicates how critical the entity is for its customers.

A quantitative rating model is often used for quantitative evaluation of individual borrowers. Furthermore, in many cases, it is better to use substantive financial data reflecting borrowers' financial conditions that are not necessarily captured by accounting data, such as nonperforming assets and unrealized losses. If quantitative financial data are insufficient to accurately measure the creditworthiness of borrowers, qualitative analysis should be used to make necessary adjustments. Specifically, (1) qualitative factors may be expressed in terms of scores that are either added to or subtracted from scores reflecting quantitative evaluation, or (2) grades based on quantitative evaluation may be upgraded or downgraded to reflect qualitative factors.

Management should ensure that audit is being conducted annually including the credit functions and have an eye on the credit rating process ongoing basis. Rating should always appropriately reflect risks associated with borrowers. Bank Reviews, therefore, are necessary to reflect changes in the creditworthiness of the borrowers. These include periodic reviews of the timing of disclosure of financial statements as well as irregular reviews carried out when there are significant changes in the creditworthiness of borrowers, such as default of large trade counterparty. Management should also take care that the Rating Committee is responsible for the final credit rating in special cases such as mergers/absorptions, management changes affecting the company's status, as well as in cases of serious reservations expressed regarding the assessment and the provision of additional information.

A Bank can assign below (illustrative) Rating Symbols and Definition to their SME client before granting the loan

Borrower Ratings	Level	Borrower Classification
1	Excellent	Normal
2	Prime	
3	Good	
4	Above Standard	
5	Standard	
6	Below Standard	
7	Need Attendtion(1)	Needs Attention
8	Need Attention(2)	
9	In Danger of Bankruptcy	In Danger of Bankruptcy
10	Bankrupt	De Facto Bankrupt and Bankrupt

Ways Where External Rating Agencies Can be Helpful in Rating SME for Indian Banks

Information Exchange for SME:

A large bank of information relevant to SMEs resides with multiple entities such as government agencies, lenders, and financial institutions that SMEs deal with in their regular course of business. This may include information on tax payments, loan servicing, credit card payments, and trade. An SME information exchange where it is mandatory for members to share their data and where members have the right to access data of other members could provide a treasure trove of information for a variety of third parties such as lenders. For meaningful use of data available with the information exchange, DCRAs could analyze the information and classify it into categories or grades based on the track record of timely payments of debt, taxes, or other dues. This would allow DCRAs to come up with products, such as short-term liquidity and long-term sustainability ratings, trackers of default rates, and monitors of the most recent commercial transactions.

In order to successfully create an information exchange for SMEs, rating agencies will have to find technology-driven solutions that can analyze massive datasets to arrive at conclusions on behavioral trends. The analysis could look at payment or servicing patterns and behavior across different parameters, such as geography, industry clusters, and demography, among others, so that decisions regarding future loans and pricing can be aligned to the outcomes of such analysis.

Portfolio Credit Evaluation

Evaluating the credit risk profile of a portfolio of SMEs may sometimes be more meaningful for banks when taking a lending decision, rather than focusing on individual SMEs. In many jurisdictions, banks are required to earmark a certain portion of their loans for certain industries. They may also have internal ceilings on investments or loans per industry. Understanding the credit profile in aggregation of a cluster of SMEs operating in similar businesses will be useful for lenders to take decisions regarding portfolio behavior, forecasting trends, assessing benchmarks, and pricing. This helps diversify risk and makes lending decisions easier, thus facilitating greater credit flow to the SME sector.

In order to undertake portfolio credit evaluation, rating agencies will have to study past default statistics of a large sample of SMEs, classified into various industries. From this, joint default probabilities for various types of clusters may be arrived at. Correlation between different clusters may be used for creating benchmarks that may form the basis for ranking a particular portfolio vis-à-vis others.

Assessment of Collateral Mitigants

Demand for large collateral from lenders is a chronic issue with SMEs in many banks. Obtaining credit becomes a problem, especially for start-ups. This difficulty can be addressed by establishing guarantee funds, which can take the form like **Mutual guarantee funds(**In this architecture, a set of SMEs can come together, pool resources, and deposit them in a bank. This resource pool or the mutual guarantee fund (MGF) would serve as collateral for the SMEs to borrow funds. Industry associations, special economic zones, or even community groups (enterprises in a geographical cluster) can pool their resources and hold the fund with banks as a guarantee against default by members.)

Rating agencies will have to undertake default statistical evaluation for a large sample of SMEs and then arrive at relative risk grades for various clusters. For MGFs, the correlation between SMEs in a cluster to pool together resources will also be important.

Benchmarking Services

Rating agencies can benchmark the performance of various SMEs industries such as textiles and automobile ancillaries etc. Banks can use the results of such benchmarking to select SMEs that they would want to finance. A benchmarking exercise involves the study of a representative group of entities from a particular industry to arrive at median or average trends in relevant parameters such as sales turnover, employee productivity, return on assets, and working capital turnover. Within same Industry these benchmarks can be compared and accordingly Large SMEs whose performance is below the benchmark can be identified for training support or aid, while those who perform better than the benchmark can be identified as case studies to understand their strategies and establish best practices.

Providing Services across the Life Cycle of a SME

Domestic credit rating agencies may be involved in many different ways in evaluating and analyzing SMEs across their life cycle, depending on the needs of firm or banks like payment record overview in last transactions, authentication and verification, commercial information about customer & track record in import-export business, etc

CREDIT RATING METHODOLOGY AND TECHNOLOGY

In US, As per the Wall Street of Journal (April,2015), A new metric is developed by Fair ISSAC Crop ,most widely use consumer credit score. As per the new score, which isn't yet named, will be calculated based on consumers' payment history with their cable, cellphone, electric and gas bills, as well as how often they change addresses and other factors, according to Fair Isaac, also known as FICO. The new score will pull data from a separate database of telecommunications and utilities providers maintained by Equifax. It also will incorporate data from a LexisNexis database, including how often people change addresses, with frequent changes suggesting less stability.

The newest model from Vantage Score uses a special segmentation technique that recognizes the value of data up to and greater than 24 months old. This allows Vantage Score to generate scores for 30 to 35 million of these consumers, 7.6 million of whom receive scores above 620. That is 7.6 million potential borrowers who would pass the first test of eligibility just by using an updated scoring model. (www.amricanbanker.com June2015)

Indian Banks may combine rating models for some loan and can used Expert Judgement Credit rating Models. It is often not cost-effective to apply the intensive, bespoke credit analysis used for large and global corporate customers. Yet SME and commercial customers have often been quite impervious to purely statistical approaches to credit scoring, as is often applied to small loans for retail customers. In many cases, the optimum approach is to apply what is known as an 'Expert Judgement' credit rating model. This should reduce costs, speed up decision-making, and improve the predictability and consistency of lending decisions. Expert Judgement models are also usually the foundation for more advanced capital measurement techniques for credit risk under Pillar 1 of Basel II/ III. This requires back-testing against previous default experience and/ or calibration against existing Probability of Default (PD) models. However, the first step is to make sure the model provides effective discrimination based on 'rank order'.

Indian Banks should develop Expert Application Rating Card

A custom Rating card is built using past applications from the Banks portfolio where each application's subsequent performance is evaluated. In the case where past data is not available, due to the portfolio being new or where past information was not collected an expert Rating card could still be built.

Expert Rating cards are not built on data from the Banks portfolio but rather using the Rating card developer's knowledge of the industry the Bank operates in. Once completed, an expert Rating card will be delivered that will use information from the application form to produce a score. The main differences between the expert and custom Rating card developments are data availability, cost and speed of development.

It is important that the key decision makers as well as members from the Board,, Credit Committee of the banks and risk departments are involved in the development. It is not only necessary for the operations department of the bank to provide insight on the current rating system, but also to understand the implications and possible changes that will be required to the system.

The applications process flow could change to cater for additional policy rules upfront. These are usually accounts that will be excluded from the scoring process. Examples of these can be applications below the required minimum age, staff accounts, VIP's, minimum income or maximum number of loans.

The process of determining whether an application is scored may require the retrieval of information from other credit systems. The policy may be to allow only one account or loan, and it would therefore be advisable to have a link from the application system to the account processing system. Applications with existing accounts or loans can then be declined upfront without being scored. See the example below;

Scores
240+
220-239
200-219
180-199
160-179
<160

Decision
Automatic Accept
Automatic Decline

The risk department will be required to educate the rest of the bank on scoring. Monitoring and validation of the rating card will also need to be implemented.

When implementing an expert application rating card, the Bank should be prepared to go through policy and system changes. Various departments will need to come together and agree on decisions around the policies and the scoring system. It is also important to have the correct application process flow, as it can be costly if not thought through properly. The introduction of scoring as well as the changes to systems and processes will require training to ensure that the staff accept the new decision process and adhere to the system decisions.

Having no statistics available for the setting of the initial cut-off will require sufficient data to be accumulated. This will enable the Banks to track the performance and quality of the Rating card as well as to determine the scorecard cut-off. It is therefore very important to store all the application and subsequent performance data. Ensuring good quality data will not only assist with the tracking of the expert Rating card, but also ensure that data is available to build future empirical Rating cards**.**

CONCLUSION

Small and Medium Enterprises (SME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. SMEs not only play crucial role in providing large employment opportunities at comparatively lower capital cost than large industries but also helps in GDP growth in the nation. The SME sector has the potential to spread industrial growth across the country and can be a major partner in the process of inclusive growth. It needs joint effort to solve the SMEs Financing embarrassment.

Inadequate credit assessments and monitoring during the upturn in the economy has contributed to the high NPAs and Restructed assets. Bankers are far behind in lending guidelines laid down by RBI, in relation to SME sector, the biggest challenge for Banking sector is, there is no proper mechanism, un like bigger corporate to measure the quality of the organization in terms of asset quality, IP(intellectual properties) and the business through acclaimed private agencies. In order to ensure that the banking system penetrates the SME space more and at the same time, applies caution in terms of asset quality, all participants in the economy like, the banks, regulators, borrowers need to take responsibility for this. All stakeholders in the economy need to proactively contribute towards a better credit assessment and monitoring framework with the regulator enabling initiatives

The Financial Stability Board (FSB)in its recently published peer review report on national authorities' implementation of the FSB Principles for Reducing Reliance on CRA Ratings finds that Indian regulatory regime has put in place systems and procedures to develop internal credit risk assessment and due diligence by the market participants and it is strongly believe that with the participation and contribution of all stakeholders, a holistic credit assessment and monitoring is the way forward to rein in the high level of NPAs and restructured assets.

Some of Major Recommendations includes following:

- Encouraging CRAs to develop industry specific expertise
- Create a Holistic Regulatory Framework for Credit Ratings along with an umbrella Regulator
- Banks needs to effectively used market information in their credit ratings methodology
- Banks should also be encouraged to develop their internal rating models and validate these models
- An SME information exchange among banks could provide information for a variety of third parties

Rouse (2002) in his book mentioned that the professional credit risk managers apply the following 'lending principles' to the credit decision:

- Take time to reach a decision.
- Do not be too proud to ask for a second opinion.
- Get full information from the customer and do not make unnecessary assumptions (i.e. do not lend to a business you do not fully understand).
- Do not take a customer's statements and representations at face value and do ask for evidence to support the statements.
- Distinguish between facts, estimates and opinions when forming a judgement.
- Think again when your gut reaction suggests caution, even though the factual assessment looks satisfactory.
- It important to avoid unnecessary bureaucracy and delays.

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