

Risk Assessment Model for Assessing NBFCs' (Asset Financing) Customers

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Abstract— Non-banking financial companies (NBFCs) form an integral part of the Indian financial system. The history of the NBFC Industry in India is a story of under-regulation followed by over-regulation. Policy makers have swung from one extreme position to another in their attempt to set controls and then restrain them so that they do not curb the growth of the industry. This report covers the industry. Most of this NBFCs' are operating with high risk of lending and more often NBFCs' lend credit to Small and Medium size enterprises, which are categorized as high risk class of Assets. To assess such high risk assets we need to have a comprehensive model. This paper aim is to build Risk Assessment Model for NBFCs' based on both qualitative and quantitative aspects of the client.

Index Terms—NBFC, Asset Financing, Risk, Credit Rating

I. INTRODUCTION

A. Industry

Non-banking financial companies (NBFCs) form an integral part of the Indian financial system. The history of the NBFC Industry in India is a story of under-regulation followed by over-regulation. Policy makers have swung from one extreme position to another in their attempt to set controls and then restrain them so that they do not curb the growth of the industry. This report covers the industry. Non-banking financial companies (NBFCs) have seen considerable business model shift over last decade because of regulatory environment and market dynamics. In the early 2000s, the NBFC sector in India was facing following problems:

- 1) High cost of funds
- 2) Slow industrial growth
- 3) Stiff competition with NBFCs as well as with banking sector
- 4) Small balance sheet size resulting in high cost of fund and low asset profile
- 5) Non performing assets

Majority of NBFCs were not able to face the pressure created on and were wiped out. However, since FY2001-2002, there has been significant improvement in the business model of existing NBFCs with improvement in overall business environment. NBFCs have been able to expand their resource profile by diversifying the funding avenues. Further a strict control on asset quality and overheads, coupled with use of innovative borrowing tools such as securitization has resulted in improved profitability of NBFCs.

B. Key Insights about NBFC Sector as of Today

As per CRISIL's NBFC sector report, Net profitability margin of NBFCs has more than doubled from FY2000-01 to FY2001-02 as growing interest spread is key to profitability.

- 1) Higher Interest yield than banks

Further on the whole, NBFCs have higher interest yields than banks. The difference in their interest yield can be attributed to the following reasons: -

Some NBFCs have a wide reach and traditional niche strengths. Also they have forged good customer relationships in their respective operating geographies. This has led to higher interest yield incomes as they have been able to command a premium.

Vehicle finance NBFCs have shown an increasing trend in the component of used vehicles financing in their portfolio. Which offer a higher internal rate of return than new vehicles?

- 2) Marginal increase in fee based income aided profitability

The core fee income of all NBFCs improved marginally in FY2002-03.

- 3) Strict control on overheads help maintain core profitability

As per CRISIL study, the NBFCs have managed to control any significant increase in their overheads in spite of the expansion in their business and reach.

- 4) Enhanced investor base and funding avenues bolster resources profile

The NBFCs business model has strengthened considerably over the past few years in terms of access to varied funding sources. The growth of mutual fund industry and the emergence of securitization as a borrowing tool have helped to strengthen the NBFC sector.

In the near term, NBFCs will continue to maintain their core profitability at close to their FY2002-03 level. Interest costs have declined in FY2003-04 as well, which will enable them to maintain their interest spreads, since interest yields are not expected to decline significantly in the near term. This coupled with the control on overheads, will enable NBFCs to maintain their core profitability in the near term

In today's scenario NBFCs (Non Banking Financial Companies) are facing a lot of competition from the banking sector – nationalized as well as from the foreign banks. In liberalized economy, service differentiation has become insignificant and companies are trying to differentiate their offer by various augmentations in the service level.

The relatively lucrative spreads in the retail financing market will attracts both banking companies and NBFCs, thus intensifying competition and in turn bringing pressure

on spreads. However, for the public sector banks to emerge as serious competition for the top-rated NBFCs, significant changes in the way they operate are a must. Otherwise, the public sector banks can only chip away at their market share in non-metro locations, not take it over entirely.

Current commercial vehicle and construction equipment financing is quite crowded with lots of financing companies coming into this line. The list includes ICICI, HDFC Bank, Kotak Mahindra Finance, Cholamandalam Investment & Finance, Sundaram Finance, LGF, Tata Finance, Citi Corp, Sivagami Finance & Investments, Ashok Leyland Finance Limited and Centurion Bank Limited being the active partners in this sector. Only smart financing option and service level are a positive influence.

The commercial vehicles financing segment is a large proportion of the financing market. For NBFCs, commercial vehicles financing account for a much larger proportion of their disbursements. After a few moribund years, activity in the commercial vehicle market has picked up. This is reflected in the growth in disbursements of NBFCs too.

Over the long term, however, the rate of growth in commercial vehicle financing is likely to be linked to the economy's growth dominated by cyclical activity. Conscious of such cyclicity, top-rated NBFCs are intent on diversifying their revenue profile. Some such as Sundaram Finance and Cholamandalam have forayed into asset management and insurance. Sundaram Finance is also into housing finance.

Commercial vehicle sales up by 36.2 per cent during April-December 2003 as a robust manufacturing sector, construction of highways and abundant rainfall continued to keep automakers busy.

A total of 1.78 lakh buses and trucks were sold during the period against 1.30 lakh units a year ago, says a data compiled by the Society of Indian Automobile Manufacturers. While medium and heavy (M&H) bus and truck sales jumped 41.2 per cent to 1.09 lakh units that of light commercial vehicles went up by 29 per cent to 68,707 units. In the M&H segment, sale of trucks grew 44.6 per cent to 92,055 units while that of buses went up by 25.8 per cent to 17,366 units. Sale of light trucks also jumped by 39.7 per cent to 55,057 units but light buses suffered a 1.6 per cent drop to 13,650 units.

A resurgent manufacturing sector, especially cement and steel, has also boosted truck sales this fiscal. Abundant rains last year also helped to improve sentiments on expectations of better agricultural production and led to more demand in the rural areas, analysts said.

Demand for trucks, mainly M&H vehicles, has been on the upswing due to speedy progress on various highway projects. Generally, due to the amount of capital involved in the purchase of these assets, the growth in demand for them is directly proportionate to the demand for finance.

II. LITERATURE REVIEW

A. Risk

The interpretation of the word 'risk' will determine the approach to risk management. The word 'risk' is interpreted

in three distinct senses namely risk as hazard, risk as opportunity and risk as uncertainty.

Risk as hazard is the most commonly used meaning of risk and it means likely financial losses arising from negative events such as control failures, bad publicity and loss of reputation. Risk management in this context would mean eliminating possibilities of losses from such negative events by putting in place adequate control systems.

Risk as an opportunity means, taking risks and earning adequate returns on them. This implies the trade-off between risk and return. Here risk management, becomes risk optimization meaning maximizing the upside potential and minimizing the downside. Here capacity and ability to manage risk is used to increase shareholders' value and achieve a competitive advantage.

Risk, as uncertainty is basically a statistical concept, which assumes a normal distribution for future outcomes. Here risk management means narrowing the difference between the expected outcomes and actual results. Banks need to manage the risk inherent in the entire portfolio as well as the risk in individual credits or transactions. The effective management of risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization.

In simple words, risk is the possibility of losses associated with decrease in the credit quality of borrowers. In a bank, loss may stem from default due to inability or unwillingness of a customer to meet his commitments in relation to lending, trading, settlement and other financial transactions. A default reduces the present value of the loan and consequently the value of the bank's business. Thus, it is imperative that banks have a robust risk management.

III. MODEL BUILDING

A. Need for Study

A Risk Assessment Model (RAM) is necessary to avoid the limitations associated with a simplistic and broad classification of applicants into a "good" or "bad" category.

Ideally, credit and marketing functions should be separated. But, in the case of Centurion Bank Limited, the marketing and credit functions are clubbed and are performed by the marketing manager. If the manager detaches himself from the organization, it will be difficult for the concern to carry on from there. The risk of biased approach towards customers also poses a great threat.

So, by systematizing the whole process, we are not only evening out the process but also removing the element of bias and subjectivity.

The bank currently uses an evaluation sheet giving equal weights to all parameters under consideration. Different parameters deserve different degrees of importance. These raise the need for development of a Risk assessment model to complement the evaluation sheet.

The development of such a framework will standardize the judgment in the credit selection procedures.

The RAM will deploy a number as a primary summary indicator of risks associated with a credit exposure. Risk management encompasses identification, measurement,

monitoring and control of the credit risk exposures. Such a rating framework is the basic module for developing a risk management system.

B. Grading System for Standardization of Risk

The grades (symbols, numbers, alphabets, and descriptive terms) used in the internal credit-risk grading system represent, without any ambiguity, the default risks associated with an exposure. The grading system enables comparisons of risks for purposes of analysis and top management decision-making.

The grading system should, therefore, be flexible and should accommodate the refinements in risk categorization. The grading system adopted in a risk management could be an alphabetic or numeric or an alphanumeric scale. Adoption of a different rating scale would permit comparable benchmarking between the two mechanisms. Several banks utilize a numeric rating scale. The number of grades for the "acceptable" and the "unacceptable" credit risk categories would depend on the finesse of risk gradation.

C. Key Outputs of RAM

→ Defining the pricing bands

The grade on the rating scale is expected to define the pricing and related terms and conditions for the accepted credit exposures. It is possible to define broad pricing bands and directly link the band with the grade on the rating scale. Higher the risk, higher could be the price charged.

→ Limits on exposure

The amount sanctioned would depend on the credit-score on the RAM. These limits could be linked to specific parameters like, a certain percentage of the total debt required by the borrower. This would help in a larger dispersion of risk amongst lenders and limit risk concentration in moderate credit-quality projects.

→ Tenure of loans

The rating scale could also be used for deciding on the tenure of the proposed assistance. A longer term could be offered to safe customers.

→ Monitoring the exposures

Banks may also use the rating scale to keep a close track of deteriorating credit quality and decide on the remedial measures. For instance, the frequency of surveillance on category 4 exposures could be kept at quarterly intervals, while those on category 2 loans could be half-yearly.

IV. RESEARCH METHODOLOGY

A. Objective Of The Study

1) Primary Objective

To design and develop risk assessment model based on market forces for assessing NBFC Customers.

2) Secondary Objective

Study of various risk assessment models available for asset financing.

B. Research Design

1) Nature of the Study

The study is descriptive identifying the parameters and assigning the appropriate weights for them.

2) Sampling Design

Sampling frame

This represents the list from which the sample has been selected. The credit officers and the field officers in the institutions extending construction equipment and commercial vehicles financing constitute the sample.

Type of sample

The sampling technique used is census method. All the institutions extending credit in this area are considered.

Sample size

The number of institutions extending commercial vehicle and construction equipment finance is 10 and the number of officers with whom the judgmental survey was conducted is 19.

3) Data Collection

The type of data used in assigning appropriate weights aiding the development of the model is primary. However, the various parameters were identified using secondary data. The instrument used for the survey is questionnaire. Personal interview method is used for collection of primary data.

4) Data Analysis Tools

Financial ratios were used to measure the strength of the customer. Score model for assessing risk to convert responses to scores. Weighted average method applied to assign appropriate importance to various parameters.

5) Limitation of the study.

The purview of the project is limited to the Commercial Vehicle and Construction Equipment financing division

The accuracy of the model depends on the accuracy of information provided by the customer.

V. STEPS IN DEVELOPING OF MODEL

STEP- 1: Identify all the key risk components in the principal business

The first step in the development of the model was the identification of the various parameters to be taken into consideration. For this purpose, the various manuals and documents pertaining to appraisal were carefully studied. More factors were added to the list to make it comprehensive and effective. This was done through literature survey and scanning of other leading organization's appraisal systems. The following was the result.

Risk assessment can be done from 2 aspects:

▶ Quantitative aspect:

Quantitative aspect refers to managing the credit risk by using the quantitative tools and techniques such as ratio analysis, and reaching a concrete number for every loan which would indicate the magnitude of risk and expected returns, on a case by case basis.

▶ Qualitative aspect:

Qualitative aspect is taking a holistic view by a bank at its overall portfolio, deciding the lending limits to a sector, setting up the broad policies and procedures, and so on.

Both quantitative and qualitative aspects need to be taken into consideration while computing the risk levels. In the case of corporate clients, post-mortem of the balance sheet is one of the main instruments. Ratio analysis helps us determine whether the loans have to be extended. But, past performance is not an ideal indicator of the future performance. This raises

the necessity to consider other qualitative parameters such as technological status, reputation, repayment track with others and so on.

Classification of Risk: The risks faced by financial institutions extending commercial vehicles or construction equipments finance have been regrouped as follows.

A. Liquidity Risk

Liquidity risk is the non-availability of cash to pay a liability that falls due. A company is deemed to be financially sound if it is in a position to carry on its business smoothly and meet all the obligations - both long term as well as short term - without strain. Assessment of the efficiency with which the funds are put to use is very important for credit analysis.

The study of efficiency of debt-service management becomes essential to banks as the ratios reveal

- Whether the profit of the firm is enough to cover not only the interest payment, but also to provide a reasonable cushion against future uncertainty
- Whether the profit is sufficient to provide enough coverage for repayment obligations
- Whether the assets of the firm provide adequate security for loans sanctioned.

In short, the coverage ratios show the relationship between the debt servicing commitments and the sources for meeting these burdens.

Debt Equity Ratio

The ratio brings out the extent to which the firm is dependent on outsiders for its existence and indicates the proportion of the owners' stake in the business. A high ratio means that claims of creditors are greater than owner's funds. Excessive liabilities tend to cause insolvency. This is the most unfavorable situation for a banker, as he may gain the position of just one among the many creditors of the company.

Current Ratio

The current ratio is an index of the concern's financial stability since it shows the extent of the working capital, which is the amount by which the current assets exceed the current liabilities. A high current ratio indicates inadequate employment of funds while a poor current ratio is a danger signal to the management. It shows that business is trading beyond its resources.

Current ratio of 2 is ideal. The presumption is that for every two rupees collected by the business; one rupee is used for discharging the current liabilities, leaving another rupee as the margin of safety. However, this ratio should be seen in relation to the component of current assets and their liquidity. If a large portion of current assets are obsolete stock the firm may fail even with a ratio higher than 2.

Liquidity Ratio

This ratio is also an indicator of the short-term solvency of a firm. Ideal ratio is 1:1. A comparison of current ratio to liquid ratio indicates inventory hold-ups. The higher the amount of liquid assets to current liabilities the greater the assurance of current liabilities being paid off.

Interest Coverage Ratio

It tells the analysts the extent to which the firm's current earnings are able to meet current interest payments. When

this ratio is high it shows that the business would earn sufficient profits to pay the interest charges periodically. A low interest coverage ratio may result in financial embarrassment.

Debt service coverage ratio

The standard ratio is 1.5. However, if the ratio is between 1 and 1.5, suitable spacing of the repayment period and thereby lowering the annual repayment obligations, may raise the ratio and make the proposal financially viable. A persistently low ratio indicates heavy repayment obligations, which the business is at pains to meet. The level of these ratios reflects the result of business risk drivers and the funding policies. Generally speaking, higher the level of coverage, higher is the rating.

B. Operations Risk

In a competitive market, it is critical for any business unit to control its costs at all levels. To measure the operational efficiency, the turnover ratios and profitability ratios are used. They measure how efficiently the firm is employing the assets. They also represent the relationship between profit and sales, and between profit and investment.

Net profit trend

The final profit figure arrived at after charging all the expenses of the firm against all its income is called net profit. A banker would look at the trend of net profit over the years. A company, which has been consistently achieving positive growth rates, reflects a healthy industry position and the management's commitment to the business, effective steps taken by the management to promote their sales in the market. The company with positive growth is favored than those whose growth is static or negative.

Cash profit trend

Cash profit represents the annual profit arrived at before charging depreciation. Cash profit is superior to net profit due to the following reasons:

- Though depreciation charged to profit and loss account, there is no actual outflow of cash
- Depreciation is the total cost of fixed assets annually averaged over the life of the machine. Regarding annual depreciation once again would amount to double charging.

Fixed Assets Turnover Ratio

This ratio measures the sales per rupee of investment in fixed assets or the efficiency with which fixed assets are employed. A high ratio indicates a high degree of efficiency in asset utilization and a low ratio reflects inefficient use of assets.

Total Assets Turnover Ratio

This takes the total view of the business as a producing unit. It determines the produce ability of the assets of the business, which also indicates the managerial capacity of the entrepreneur in putting the assets to best use.

Return on Investments

The ROI is the key factor of profitability of a business. It matches the operating profit with the assets, which earn this profit. Efficient utilization of assets will have a relatively high return, while a less efficient use will have a low return. Higher profitability implies greater cushion to debt holders.

Free Assets to Total Assets

This ratio is critical to firms employing commercial vehicles and construction equipments as it determines the level of assets available to a banker in case of default. The higher the ratio more secured the funding would be.

Revenue per KM/HR

Expected revenue generated on the financed vehicle will form one of the criteria for assessing the viability. This will show the banker whether the customer will be in a position to repay the loan.

Operating Cost per KM/HR

The operating cost may be classified into fixed and variable cost. Study under this classification helps in arriving at the optimal level of utilization of the equipment. However, the operating cost and revenue for the vehicle cannot be measured in isolation. The profitability of the equipment is what matters at the end of the day.

Fleet Strength

Fleet strength is the number of equipments/vehicles held by the customer and gives an idea about the size of the business. A lender generally looks at a small business with high caution, as there are only few assets to turn to incase the debts turn bad.

Work orders on Hand

The number of work orders that one has helps to check how well the business is progressing. Generally, when the business has many, steady work orders, it shows that they have constant business. However, those customers who have unsteady number of work orders need a close watch. It also shows the trend of the business in the market.

C. Credit Risk

Credit risk is risk resulting from uncertainty in a counter party's willingness to meet his contractual obligations. The business character of a borrower rests on traits as trustworthiness and commitment.

Repayment track with others

The repayment track of the borrower with others determines how well they have carried out their business in the past years. A business with prompt payment has less credit risks than those whose reputation is a question mark in the market.

Resale value of the asset financed

The customers are generally divided into two categories, namely 'A' and 'B'. Category A represents equipments that command high resale value and category B represents low resale value equipments. In case of default on the part of customers to repay the loan, the bankers will look to seize the asset and realize the due amount from it. Thus, a category represents a safer investment for the bankers.

Percentage funding to total cost

This helps us measure the level of financial commitment of the borrower in the proposal. Lower ratio means more contribution from the borrower and the risk on the banker's end is low.

Value and liquidity of collateral offered

As a driving note collateral must not drive lending decisions. The best security of a lender is a thriving business on which the appraisal should focus. Whenever, the bank is forced to foreclose the collaterals, it demonstrates that the lending decision in the first place had been unsound.

The demand for collaterals as a condition for a loan is a sufficient indication that the borrower lacks the required level of credit worthiness. Collaterals enhance the credit worthiness of a borrower. The test of good collateral lies in its 'liquidity', which, in other words means the saleability of the assets. The higher the liquidity is, the better the collaterals.

Timely submission of information

The customers are required to be prompt in submission of information. A delay in such submission is highly likely to be caused because of tampering of information. This reflects to a great extent the credibility of the customer. Thus, customers who are always regular in submitting the information score over those who have an irregular track for submission.

D. Market Risk

The factors influencing the relative competitive position of the customer are examined in detail. Some of these factors include nature of business, reputation of promoters, influence of business cycle, influence of government policies and technology status. The result of these factors is reflected in the ability of the issuer to maintain or improve its market share. It may be mentioned that the customers, whose market share is declining, generally do not get favorable long-term ratings.

Nature of the Business

The kind of business in which the customer is in will greatly influence the risk associated with him. It might be against the policies of the company to advance loans to a few businesses, like in the case of CBL, advancing of loan to cab drivers is not entertained. Thus, the preferred businesses might have been realized from experience or observation.

Net Worth to Netsales

The net worth of a business provides that important cushion to withstand shocks from adverse changes in external (economic, financial and legal) and internal environments of the business. Net worth is thus referred to as the risk capital. When compared to the sales of the business, it shows the efficiency with which the capital is rotated in the business.

Reputation of Promoters

The promoters are the ones who initiate a business idea successfully. The background of the promoters gives an idea of their business expertise and their talents. A promoter hailing from a highly reputed business family is less likely to fool the public. A person hailing from a business family, whose reputation is not established or suspect, is to be looked at with caution, as the probability of default is high.

Technology Status

Obsolescence is another problem that an industry faces. A firm's competitive position is decided based on the technological competence it possesses. Advances in technology can dramatically alter a firm's landscape.

The firm is at an advantageous position when it holds superior technology. The risk is more among the players in the industry when the technological competence is inferior. The risk of not keeping up with the progress of changing technology may affect the growth. Hence a firm with a good technological background is more attractive.

Effect of Business Cycle

Almost every industry suffers from some amount of cyclical fluctuations. At the downturn of a cycle, credits may be frozen, while in its upswing, there may be excessive fluctuations of loan volumes. It is important for a banker to know on which side of the cycle a borrowing unit is operating to adjust to the credit needs of the borrower and the riskiness of his fund.

A business which is least impacted by the business cycle would be an ideal borrower. As the impact decreases the risk also declines.

Government Policies

The pace and pattern of growth in a country depends largely on various policies of the Government. It acts as a regulator and a mediator between the businessmen and the public. When the government policies are friendly and favorable towards the industry, then the growth prospects are high.

Provision of incentives such as export subsidy, cash incentives, duty drawbacks, excise relief, credit at concession rates helps an industry grow. On the contrary, absence of such positive policies or a very stiff taxation policy may create obstacles to the growth of that industry.

STEP-II: Study the weights given in similar organizations

Once the parameters were identified, a questionnaire was prepared embracing all the parameters and was circulated among various bankers in order to find out the general practice of assessment. The 10 key players in this sector were chosen. All of them were considered and their opinions were collected.

STEP-III: Allocate weights to risk components

The data collected was then classified, sorted and weights were assigned. Higher weights were allocated for elements with higher importance and vice versa. The categories within which these factors were classified were also weighed. Quantitative and qualitative factors were given appropriate weights.

The weights assigned to various parameters developed in this study are based on a conceptual understanding of the relative impact of these parameters on the riskiness of an enterprise or an industry to which it belongs. The weights may change if the external economic environment undergoes substantial changes.

It is not possible here to claim full objectivity in assignment of different weights, which requires empirical testing of success and failure experiences of a lending organization over a substantially long period of time.

Whatever weights are assigned to different risk parameters should be held constant for a given period of time across all borrowers, and during this period the weights must not be varied due to subjective consideration, for example to favor a particular borrower. If this consistency were upheld zealously, then even the subjective weights would gain objectivity in application. The various weights assigned to different parameters are illustrated below.

Table 4.1

Table showing various parameters with their weights		
LIQUIDITY RISK [400 Points]		
Five parameters have been identified to measure the liquidity risk. Out of the four categories of risk listed here, liquidity is considered most important and has been assigned a maximum weightage of 400 points.		
1	Debt Equity Ratio	2
2	Current Ratio	1.5
3	Liquid Ratio	2.25
4	Interest Coverage Ratio	2.25
5	Debt Service Coverage Ratio	2

OPERATIONS RISK [200 Points]		
Operations risk is measured using the 11 parameters listed alongside. Out of the 11, fleet strength and the number work orders on hand gain the maximum weights. Operations risk has been rated as being third critical and was assigned 200 points as weightage.		
6	Net Profit – past 2-3 years	0.25
7	Cash Profit – past 2-3 years	1
8	Fixed Assets Turnover Ratio	0.5
9	Total Assets Turnover Ratio	0.25
10	Return on Investments	0.25
11	Return on Capital Employed	0.25
12	Free Assets to Total Assets	1.5
13	Revenue (/km or /hr)	1
14	Operating cost (/km or /hr)	1
15	Fleet strength	2
16	Work Orders on hand	2

CREDIT RISK [300 Points]		
Credit risk depends on the 6 qualitative factors, all of which are regarded important. Credit risk, second in importance only to liquidity risk has 300 points as its weight.		
17	Resale value of Asset	2
18	%ge Funding to Total Cost	2
19	Repayment Track With Others	2
20	Timely Submission	1
21	Value of Collateral Offered	1.5
22	Liquidity of Collateral	1.5

MARKET RISK [100 Points]		
Though assigned only 100 points as weight, parameters measuring up the market risk are observed as being very crucial in determining the credibility of the customer.		
23	Nature of Business	2.5
24	Net Worth to Net Sales	0.5
25	Reputation of Promoters	2
26	Technology status	1.5
27	Effect of Business Cycle	1.5
28	Government Policies	2

QUALITY OF INFORMATION		
Apart from the various heads of risk, the sources of information for computing such risks were also rated by the bankers and the importance of each is reflected by the weights attached to them.		
29	Bank References	0.5
30	Financial Statements	3
31	Own Records	2
32	Interview with the customer	2
33	Credit Investigation	2.5

STEP - IV: Arrive at the risk rating on the Risk Assessment Model

Based on the above-mentioned information on weights a standard and comprehensive model was developed. Each of the customers will be rated on each of the parameters based on the key provided. The final score of the customer decides the risk involved in operating with him.

To aid the assessment process and to systematize the entire process, key for assessment has been developed in consultation with people well versed in this field. The key will not only quicken the assessment, but also standardizes it.

The parameters in each risk category should be analyzed based on the key and must be given a score. The scores should be multiplied with the weights assigned, in proportion to the importance of the parameter, to arrive at an aggregate for each risk category.

Each risk category is measured separately and is also expressed as a percentage, which would help to measure the risk easily. After calculating the risks under each category, they must be summed up and the grand score will be on 1000. To get a single point indicator of the risks, it is divided by 10 and expressed as a score on 100.

Based on the final score the company is given a rating by referring to the scoring guide of the model.

As mentioned earlier, the grades used in the internal risk grading system should represent, without any ambiguity, the default risks associated with an exposure.

Here, we employ a numeric rating scale. Numeric scales developed for RAM is such that the lower the risk, the lower is the rating on the scale. The rating scale consists of 6 levels,

of which levels 0 to 2 represents various grades of acceptable credit risk and levels 3 to 5 represents various grades of unacceptable credit risk associated with an exposure. The scale, starting from "0" (which would represent lowest level credit risk and highest level of safety) and ending at "5" (which would represent the highest level of credit risk and lowest level of safety), is deployed to standardize, benchmark, compare and monitor credit risk associated with the bank's loans and give indicative guidelines for risk management activities.

The model, the key for assessment and the scoring guide along with the interpretation are illustrated below.

#	Parameters	Weight	Remark	Score	Wtd score
LIQUIDITY RISK 400					
1	Debt Equity Ratio	8			
2	Current Ratio	6			
3	Liquid Ratio	9			
4	Interest Coverage Ratio	9			
5	Debt Service Coverage Ratio	8			
Sub Total					

OPERATIONS RISK 200					
6	Net Profit - past 2-3 years	0.5			
7	Cash Profit - past 2-3 years	2			
8	Fixed Assets Turnover Ratio	1			
9	Total Assets Turnover Ratio	0.5			
10	Return on Investments	0.5			
11	Return on Capital Employed	0.5			
12	Free Assets to Total Assets	3			
13	Revenue (/km or /hr)	2			
14	Operating cost (/km or /hr)	2			
15	Fleet strength	4			
16	Work Orders on hand	4			
Sub Total					

CREDIT RISK 300					
17	Resale value of Asset	6			
18	%ge Funding to Total Cost	6			
19	Repayment Track With Others	6			
20	Timely Submission	3			
21	Value of Collateral Offered	4.5			
22	Liquidity of Collateral	4.5			
Sub Total					

MARKET RISK 100					
23	Nature of Business	2.5			
24	Net Worth to Net Sales	0.5			
25	Reputation of Promoters	2			
26	Technology status	1.5			
27	Effect of Business Cycle	1.5			
28	Government Policies	2			
Sub Total					

		SUBTOTAL	
		GRAND TOTAL	
		SCORE (in %ge)	

QUALITY OF INFORMATION				
29	Bank References	0.5		
30	Financial Statements	3		
31	Own Records	2		
32	Interview with the customer	2		
33	Credit Investigation	2.5		

The Risk Assessment Model

Table showing the key for assessment						
	Parameters \ Scores	Best				Worst
	Ratings	10 to 8	8 to 6	6 to 4	4 to 2	2 to 0
1	Debt Equity Ratio	Below 1.00	1.00 - 1.50	1.50 - 2.00	2.00 - 3.00	Above 3.00
2	Current Ratio	Above 2.50	2.00 - 2.50	1.33 - 2.00	1.00 - 1.33	Below 1.00
3	Liquid Ratio	Above 1.50	1.00 - 1.50	0.80 - 1.00	0.50 - 0.80	Below 0.50
4	Interest Coverage Ratio	Above 4.00	2.50 - 4.00	1.50 - 2.50	1.50 - 1.00	Below 1.00
5	Debt Service Coverage Ratio	Above 2.50	1.50 - 2.50	1.25 - 1.50	1.00 - 1.25	Below 1.00
6	Net Profit - past 2-3 years	Increasing sharply	Increasing	Constant	Inconsistent	Decreasing
7	Cash Profit - past 2-3 years	Increasing sharply	Increasing	Constant	Inconsistent	Decreasing
8	Net Worth to Net Sales	Very high	High	Moderate	Low	Very low
9	Fixed Assets Turnover Ratio	Above 3.50	3.00 - 3.50	2.50 - 3.00	2.00 - 2.50	Below 2.00
10	Total Assets Turnover Ratio	Above 2.00	1.50 - 2.00	1.33 - 1.50	1.00 - 1.33	Below 1.00
11	Return on Investments	Above 12%	10% - 12%	8% - 10%	6% - 8%	Below 6%
12	Return on Capital Employed	Very high	High	Moderate	Low	Very low
13	Free Assets to Total Assets	Very high	High	Moderate	Low	Very low
14	Revenue (/km or /hr)	Very high	High	Moderate	Low	Very low

15	Operating cost (/km or /hr)	Very low	Low	Moderate	High	Very high
16	Nature of Business	Manufacturing	Transportation	Contractors	Agency	Cabs
17	Fleet strength	Very high	High	Moderate	Low	Very low
18	Resale value of Asset	Very high	High	Moderate	Low	Very low
19	%ge Funding to Total Cost	Below 70%	70% - 80%	80% - 85%	85% - 90%	Above 90%
20	Work Orders on hand	Many & steady	Few & steady	Moderate	Many & unsteady	Few & unsteady
21	Reputation of Promoters	Highly reputed	Moderately reputed	No background	Unreputed business background	
22	Repayment Track With Others	Very sound	Prompt	Behind schedule	Unpaid	
23	Timely Submission	Always regular	Regular	Occasionally irregular		
24	Value of Collateral Offered	Very high	High	Moderate		
25	Liquidity of Collateral	Very high	High	Moderate		
26	Technology status	Superior	Updated	Comfortable		
27	Effect of Business Cycle	No impact	Very less impact	Less impact		
28	Government Policies	Friendly	Favorable	Comfortable		
29	Bank References	Very good	Good	Moderately good		
30	Financial Statements	Very good	Good	Moderately good		
31	Own Records	Existing customer with excellent track		Existing customers with good track		
32	Interview with the customer	Highly favorable		Neutral		
33	Credit Investigation	Highly favorable		Neutral		

THE SCORING GUIDE

RISK SCORE (%)	RISK CATEGORY	EXPLANATION	NATURE OF CASE
100 – 91	0	Very low risk	Excellent
90 – 81	1	Low risk	Very good
80 – 71	2	Comfortable risk	Good
70 – 61	3	Tolerable risk	Fair
60 – 51	4	High risk	Doubtful
Below 51	5	Undesirable risk	Poor

Interpretation

RISK CATEGORY 0 - Indicates fundamentally strong position. Risk factors are negligible. There may be circumstances adversely affecting the degree of safety but even such circumstances are not likely to affect the timely payment of principal and interest as per terms.

RISK CATEGORY 1 - The risk factors are more variable and greater in periods of economic stress. Any adverse change in circumstances may alter the fundamental strength and affect the timely payment of principal and interest as per terms.

RISK CATEGORY 2 - Considerable variability in risk factors. The protective factors are below average. Adverse changes in economic circumstances are likely to affect the timely payment of principal and interest as per terms.

RISK CATEGORY 3 - Risk factors indicate that obligations may not be met when due. The protective factors are narrow. Adverse changes in economic conditions could result in inability or unwillingness to service debts on time as per terms.

RISK CATEGORY 4 - There are inherent elements of risk. Timely servicing of debts could be possible only in case of continued existence of favorable circumstances.

RISK CATEGORY 5 - Extremely speculative. Either already in default in payment of interest and/or principal as per terms or expected to default. Recovery is likely only on liquidation or re-organization.

STEP - V: Compare with previous risk-ratings and check for consistency

For checking the consistency of performance of the model, five of the existing customers were considered and rated. The comparison of the rating of the customer and the current status of the performance determines the consistency of the model. The customers chosen are

Case I

- Scores 329 on a possible 400 for liquidity
- Scores 173 on 200 for operations
- Scores 246 on 300 in credit, and
- Scores 86 on 100 for market
- The quality of information provided is very good
- Overall score of 834 on 1000 puts it in RISK CATEGORY 1, which implies a low risk

RESULT: The case may be granted credit

Case II

- Scores 232 on a possible 400 for liquidity
- Scores 78 on 200 for operations
- Scores 195 on 300 in credit, and
- Scores 57 on 100 for market
- The quality of information provided is average
- Overall score of 562 on 1000 puts it in RISK CATEGORY 5, which implies a high risk.

RESULT: The case may be refused credit

Case III

- Scores 312 on a possible 400 for liquidity
- Scores 171 on 200 for operations
- Scores 252 on 300 in credit, and
- Scores 78.5 on 100 for market
- The quality of information provided is very good
- Overall score of 813.5 on 1000 puts it in RISK CATEGORY 1, which implies a low risk.

RESULT: The case may be granted credit

Case IV

- Scores 265 on a possible 400 for liquidity
- Scores 108 on 200 for operations
- Scores 178.5 on 300 in credit, and
- Scores 54.5 on 100 for market
- The quality of information provided is average
- Overall score of 601.5 on 1000 puts it in RISK CATEGORY 4, which implies a tolerable risk.

RESULT: The case may be accepted under terms

Case V

- Scores 242 on a possible 400 for liquidity
- Scores 51 on 200 for operations
- Scores 157.5 on 300 in credit, and
- Scores 46.5 on 100 for market
- The quality of information provided is not satisfactory
- Overall score of 497 on 1000 puts it in RISK CATEGORY 6, which implies a very high risk.

RESULT: The case may be refused credit

VI. FINDINGS

Conclude the risk calibration on the Risk Assessment Model

The amount of risk assessed and that now experienced in respect of these customers were found to be the identical. Customers with high scores and low risk have been prompt payers on the other hand; those with low scores and high risk were found to be defaulters with at least two dues against their names.

Key Findings

The following are the key findings based on which the model was developed

- 28 parameters to measure the risk associated with the customer were identified.
- The qualitative measures interest the bankers more than the quantitative measures
- Liquidity risk or the inability of the prospect to meet the immediate liability is considered most significant of all kinds of risks
- While credit or the willingness of the customer to repay falls in line next, the operational efficiency is rated third in vitality

- Statement showing financial position rated as top quality information provider
- Credit investigation and interview with customers are also known to provide reliable information
- Out of the 28 parameters, all the participants rated 12 of them to be most important uniformly. They are
 1. Free Assets to Total Assets
 2. Revenue (/km or /hr)
 3. Cost (/km or /hr)
 4. Nature of Business
 5. Fleet strength
 6. Resale value of Asset
 7. %ge Funding to Total Cost
 8. Work Orders on hand
 9. Repayment Track With Others
 10. Liquid ratio
 11. Interest coverage ratio
 12. Cash profit trend

A. Recommendation: The model has been validated and NBFC can use.

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