Demystifying credit assessment in banks: An Indian perspective

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Non-performing assets, stressed assets, the Insolvency and Bankruptcy Code and prompt corrective action are a few of the catchphrases that are defining, or rather redefining, the banking industry in India. The focus on bad loan numbers has been increasing consistently post the collapse of Lehman Brothers in 2008. The sudden failure of a major Wall Street investment bank jolted regulators as well as lenders across the globe to assess the credit extended by them. Since then, the Reserve Bank of India (RBI) has issued numerous regulations to tighten the lending mechanism followed by banks and other institutions. There is no denying the fact that even after the global crisis and stringent norms, the credit extended by banks has increased, but there has been a commensurate increase in the number of default accounts.

The deployment of gross bank credit across major sectors by banks is presented below.

Figure 1: **Deployment of gross bank credit by major sectors (billion INR)**

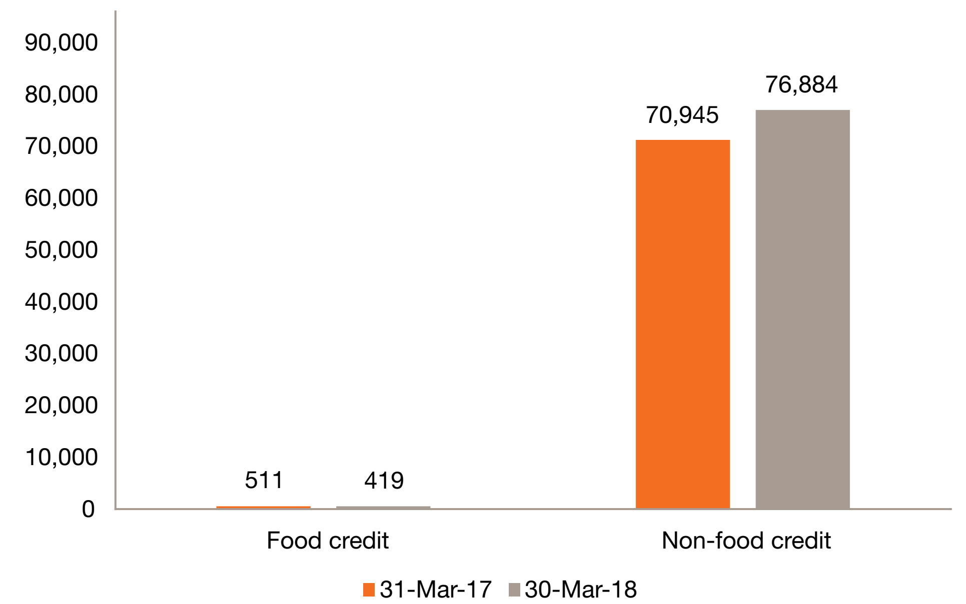
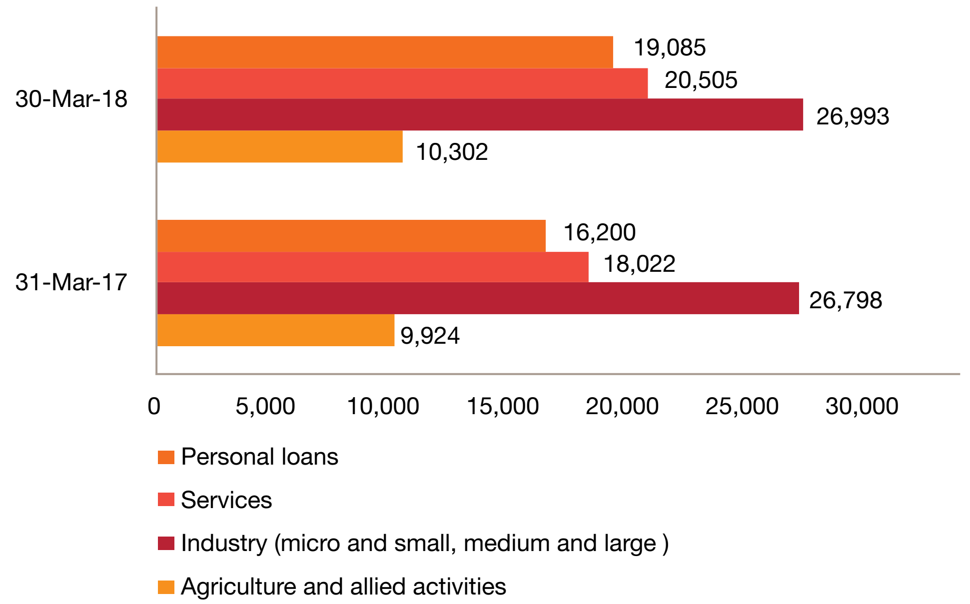


Figure 2: **Deployment of gross bank credit across major sectors – non-food credit (billion INR)**

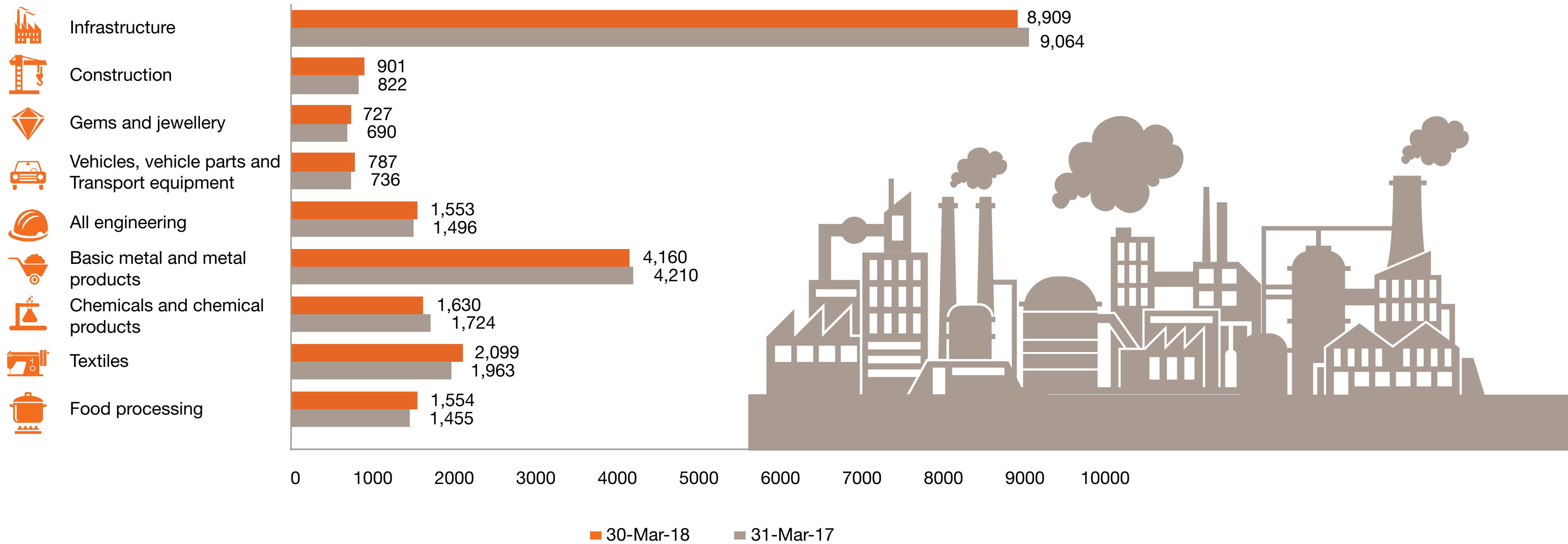


Source: RBI (https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=44351)

As per the data published by the RBI, a YoY growth of 8% has been witnessed in non-food credit (Figure 1). A close look at the components of non-food credit reveals that it comprises agriculture, industry and personal loans, all of which showed an increasing trend for the year ended March 2018 (Figure 2).

The personal loan space and loans to the service sector are steadily growing. To dig deeper, if we analyse the gross credit across industry (micro and small, medium and large), the top 10 industries (see Figure 3 below) comprise almost 90% of the credit extended in the industry division. The largest credit exposure is to the infrastructure industry, followed by the metal and textile industry.

Figure 3: **Gross bank credit across top 9 industries**



Given the robust and resilient growth in the Indian economy over the years and a projected GDP of 7.4% for FY18–19,[1] the finance requirements of various sectors will rise. The banking industry will now face the pressure of maintaining the net interest margin and profitability while carving higher provisions due to the pile-up of bad assets. As per the RBI's Financial Stability Report (June 2018),[2] the GNPA ratio[3] as at 31 March 2018 stood at 11.6%. This amounts to nearly 10 lakh crore INR and raises a question about how banks can control the default while increasing the credit in the economy.

It is essential for banks and other financial institutions to conduct an extensive qualitative and quantitative creditworthiness assessment in order to strengthen and enhance their client base while building a strong framework for the financial system. Credit appraisal or credit assessment is undertaken by all financial institutions at the time of lending in order to address certain signals and undertake precautions when a new sanction is imposed or an existing client's facilities are renewed.

Different banks have different appraisal mechanisms; however, all have the common objective of investigating a client's creditworthiness in depth and identifying various risks arising out of the client's business and economic environment. Banks identify the various risks associated with the lending and respective mitigants that can be deployed to act as a cushion in times of stress. Once this activity is done, a credit score is assigned to the borrower that determines the loan amount that can be provided within the bank's specified risk framework. Based on the associated risk with the client and the rating, the decision to grant the loan is taken. In this thought paper, we will talk about the factors considered by banks for credit assessment and how credit rating is done for borrowers.

1. https://www.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=3494
2. https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=44305
3. The gross non-performing asset ratio computes the amount outstanding in the borrowal account in the books of the bank other than the interest which has been recorded and not debited to the borrowal account.

The risk of default is inherent in every loan disbursed by a bank. A bank can enhance the quality of lending and anticipate the performance of a company through credit analysis, but it cannot predict the future of the company. Therefore, as part of the lending process, banks identify the different types of risk inherent in the economy that could affect the lending relationship between themselves and the borrower and the credit appraisal process. Some of the risks are described below:

Default risk: It is the risk of non-payment by the obligor at the due date or thereafter.

Concentration risk: It is the risk due to excessive exposure in a single sector/borrower/industry, leading to large losses.

Liquidity risk: It is the failure to meet the short-term financial demands and is known to be inherent in the financial system. It is important for banks to identify the liquidity risk prior to disbursement of a loan by assessing the financial statements of the borrower, and identifying the client as an SMA[4] with the use of the Central Repository of Information on Large Credits (CRILC[5]) report and parental support, if any. This risk may be monitored and mitigated through continuous monitoring of the financial performance of the company and account conduct of the borrower with other banks.

Counterparty risk: It is connected with the liquidity risk and if a bank is issuing non-fund based facilities to the borrower, banks need to acknowledge the default risk in pre-settlement in derivative contracts.

Sovereign risk: It is the risk where government action is involved in the repayment of the loan. Sovereign default risk arises when a government fails to meet its obligations in a timely manner, as witnessed in the 1998 Russian crisis, 2015 Greece crisis, and the 1989 and 2000 Argentina crises. Banks need to understand the sovereign risk involved in lending to a borrower in order to figure out the linkages with sanctioned countries and ensure that the loan is within their risk appetite.

Foreign exchange risk: It is the risk arising out of exchange rate fluctuations in the foreign exchange market and unhedged foreign currency exposure that a client has in the financial system, and it is important for banks to assess the likely loss as per the financial information provided by the client and auditor's statements for the same. Banks need to identify the position of the borrower in the foreign exchange market and assess the risk. For example, a borrower may have low foreign exchange risk because of the use of natural hedges or various financial derivative contracts for hedging purposes.

4. An account is categorised as Special Mention Account (SMA) when it has the potential to become an NPA/stressed asset.
5. CRILC has been set up by the RBI to collect, store and disseminate credit data to lenders.

Banks maintain an acceptable level of risk as per their risk management framework. The risks are analysed at the portfolio level as well as the individual borrower level. Once the risk is established, the credit appraisal process is undertaken to mitigate the risks.

Understanding the 5 Cs of credit

Normally, the credit appraisal process is based on the 5 Cs of credit assessment:

5Cs	Meaning	Red flags	Credit assessment aspects
Capacity	Ability to service the loan, expected cash flows and potential earnings to repay the loan, payment history of existing loans	• Poor profit margins • Incorrect cash flow forecast • Non-timely payment	• Financial assessment • Credit investigation
Character	Experience and track record of the borrower, background and industry knowledge of the client, market reputation	• Non-availability of central database for identification of borrower default • Information not shared by the client • False background verification proof submitted	• Financial assessment • Credit investigation • Management assessment
Capital	Net worth or equity invested in the business	• Negative net worth • No lenders in the market • High leverage in the business	• Financial assessment • Management assessment
Collateral	Any asset that the borrower is ready to pledge with the bank, including property and stock	• Fake collateral documents • Monitoring of collaterals • Recovery from collateral sale • Valuation of collateral	• Collateral assessment
Conditions	Usage of loan by the borrower, dependent upon the external factors like economy, and industry	• Changing economic and sovereign scenarios • Adverse market news • Change in government policies	• Market appraisal

Evaluation of these 5 Cs helps a bank in making an informed decision about lending.

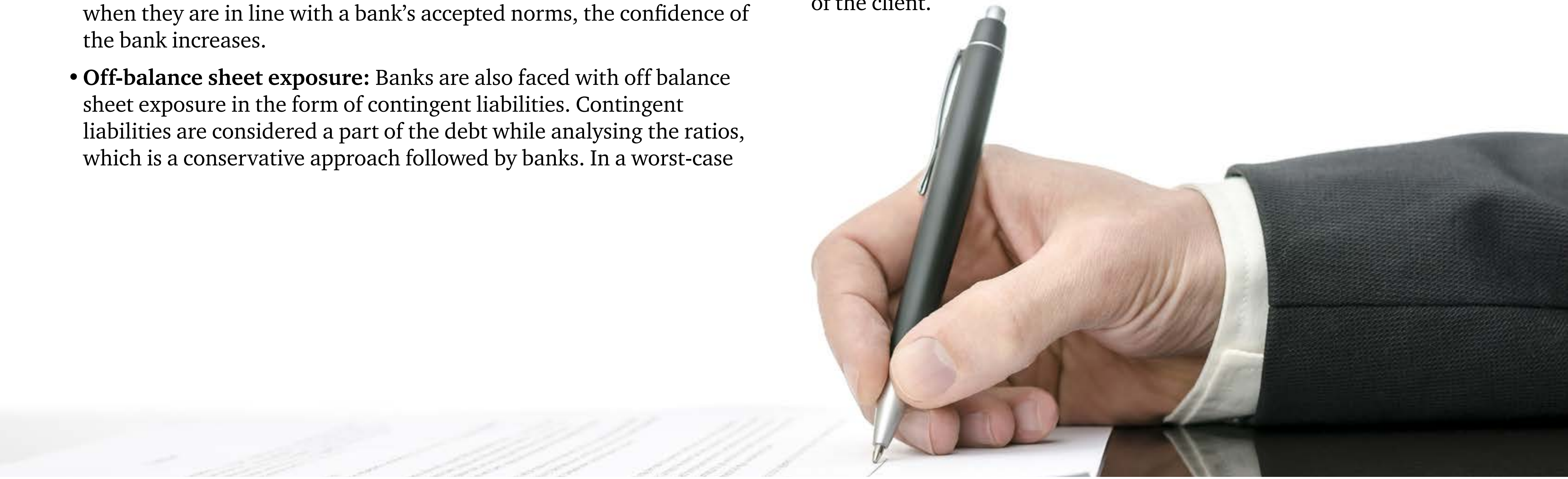
Financial assessment

The financial statements of the borrower form the basis of the financial assessment of a prospective borrower. Depending on the facility offered to the borrowers, various documents are collected to conduct the financial assessment. Some of the key points of consideration are discussed below:

- **Working capital assessment:** Working capital funds represent those funds that are used for day-to-day operations of a borrower's business. Working capital is usually short term in nature and is also known to be revolving. The appraisal of working capital involves understanding the working capital requirements of a borrower and assigning limits while providing the loan. With the help of stock statements and financial statements received from the borrower, a bank may lend the working capital finance based on various methods such as cash budget system,[6] turnover method[7] and the maximum permissible bank finance (MPBF) method.[8] For example, a bank may rely on the audited stock statements received from the clients and compute the working capital cycles with the help of debtor holding period, creditor holding period and stockholding period.
- **Term loan funding:** The scope of risk is higher in term loan funding when compared to working capital funding because of the tenure and nature of the loan. Banks scrutinise the nature of business of a client and clearly understand the purpose of the loan. It is important to understand the embedded liquidity and refinancing risk arising out of providing term loans. The weightage given to various elements in funding a term loan differs on client or purpose basis and the risk assessment involved in term loans is more complex and in depth. Banks adopt a holistic approach and understand projections of cash flows, sales and output.
- **Project finance:** Various criteria such as location of the project are given due importance in assessing the feasibility of the project and availability of raw materials along with projections of cash flows generated. The demand and supply assessment with respect to industry and target market analysis provides insight into the future trends adopted in the environment.

6. It is a system of estimating the cash inflows and outflows for a business over a specific period of time.
7. In this method, the working capital requirement is assessed at 25% of projected turnover which is shared between the bank and the borrower. The borrower contributes 5% and the bank provides finance at a minimum 20% of the turnover.
8. This method was suggested by the Tandon Committee which incorporates three methods of calculating the maximum amount a business can expect a bank to finance.

- **Projections:** Futuristic financial information must be documented for at least the tenor of the loan. It is important to understand historical performance in terms of growth and increase in revenue and assessing a single year's performance would be of no value.
- **Trend analysis**: Trend analysis may be conducted by a bank to identify warning signals in terms of financial performance which would need to be monitored.
- **Ratio analysis:** It is of critical importance while analysing the financial health of the borrower. The debt service coverage ratio and interest coverage ratio are key ratios calculated on a year-on-year basis and when they are in line with a bank's accepted norms, the confidence of the bank increases.
- **Off-balance sheet exposure:** Banks are also faced with off balance sheet exposure in the form of contingent liabilities. Contingent liabilities are considered a part of the debt while analysing the ratios, which is a conservative approach followed by banks. In a worst-case scenario, these contingencies may become a part of the borrower's liabilities and identifying these during the credit appraisal allows banks to be prepared for unaccounted events.
- **Stress testing:** Another vital element is analysing the worst-case scenario through stress testing with respect to the facilities availed by borrowers in case of significant changes in the environment that the borrower operates in. This analysis allows banks to foresee any contingencies and potential credit risk exposure that could arise during the time of crises. Stress testing allows a bank to identify potential threats and also monitor the client's overall credit portfolio of the client.



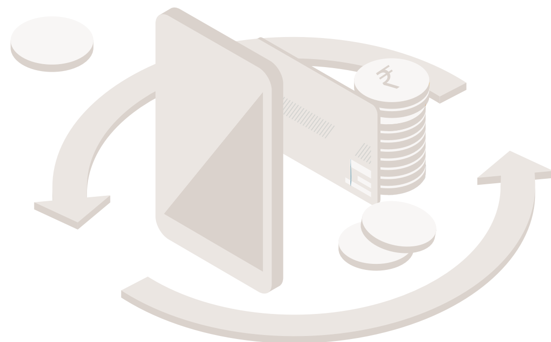
Collateral assessment

The collateral provided by borrowers strengthens the quality of the loan. It may be an asset used in the business, cash or stock. The important points of consideration are discussed below:

- **Legal enforceability:** A bank needs to ensure that the collateral placed by the borrower exists and is enforceable in the court of law.
- **Liquidity:** The collaterals should be liquid enough so that they can be sold off at the time of non-repayment.
- **Valuation:** The value of the collateral must be ascertained through independent valuers so as to decide the disbursement. Further, the collateral must be regularly valued to maintain the loan to value ratio.
- **Shared collateral:** In the case of a multiple banking arrangement, a bank must identify the agreement on the rights for levying charge on the collateral. A pari passu charge provides an equivalent right to all the lenders to share the assets under collateral in case of default.
- **Corporate guarantees:** Parental support plays a vital role in the credit appraisal process. A borrower may avail various facilities through support (in the form of guarantees) from the parent or group company. A parental support must cover the principal amount, interest and any other costs. Before accepting the parental support, banks need to assess the strategic and economic importance of the borrower to the parent company.

Credit investigation

In conjunction with a bank's internal appraisal systems, information from external independent institutions is also used in the credit appraisal process. Below are a few agencies and systems in the Indian banking system for independent credit investigation:



- **Credit rating agencies:** With the adoption of Basel II norms in 2009 for commercial banks, banks are required to provide credit based on the ratings assigned by external credit rating agencies. The use of these credit ratings supports and strengthens a bank's lending process as these are formulated by external rating agencies with a forward-looking opinion of a borrower's ability to repay on time.
- **Central Repository of Information on Large Credits (CRILC):** In 2014, a comprehensive system called CRILC was developed to help financial institutions evaluate and maintain a central database of large credits and allow other institutions to consider them as alerts. In line with the RBI guidelines, all financial institutions are required to highlight the status of stressed accounts on the CRILIC database.

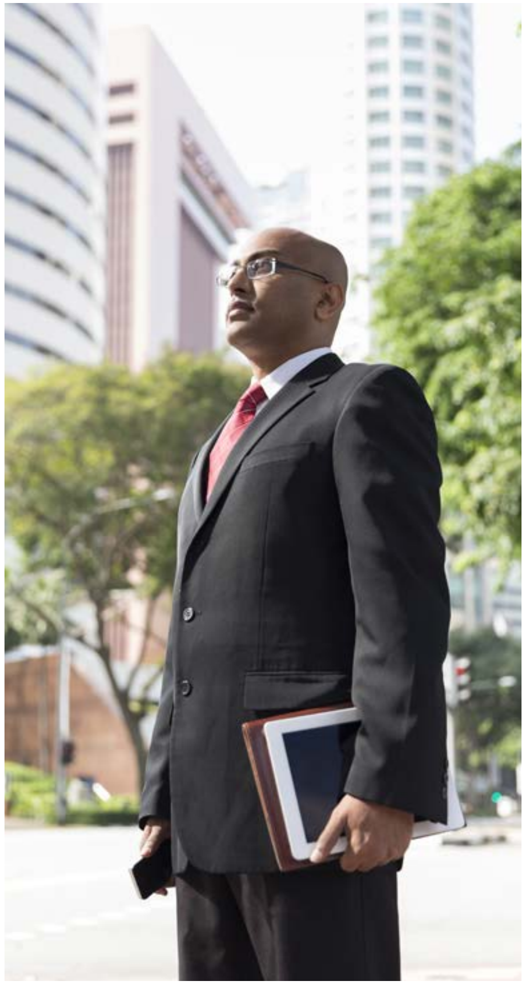
Management assessment

- Another important aspect is to assess the promoters and management of a borrower. During the pre-disbursement of credit, it is important to understand the commitment levels of these promoters.
- The **Credit Information Bureau of India Limited (CIBIL)**, authorised by the RBI, publishes a list of defaulters of 1 crore INR and above and also releases details of wilful defaulters of 25 lakh INR and above against whom suits have been filed. In any credit proposal, it is mandatory to mention the list of default directors of the borrowing firm published by the RBI and CIBIL.

Market appraisal

It is important to analyse the environment that the borrower operates in for the purpose of understanding the embedded risks and mitigating them.

- **Demand-supply gap:** Banks perform industry analysis and identify any gaps in demand and supply and the positioning of the borrower in the market. This helps the banks to make lending decisions based on the confidence drawn if the borrower is a strong market player and also if the industry has witnessed a steady pace of economic growth.
- **Inherent market risks:** The risks that arise from the external environment through the industry and market may affect the borrower's operations. Key risks involved in markets are decrease in demand or regulatory restrictions. Banks assess the sustainability of the borrower in the presence of such risks and identify the measures undertaken by the borrower to mitigate such risks. For example, if a sharp fall in volumes in the automobile industry and pressure on the market share in the vehicle business are identified, a bank may look at the borrower's position in the market and also understand if the market share is high and is mitigating impact.
- **Business growth:** Furthermore, any new contracts won by the borrower which increase the strength of its market position and any investments made by the borrower in the industry to introduce new products and increase its market share will also increase the bank's confidence.



Based on the above assessments, a detailed appraisal document is prepared for each client, which is then vetted by the credit departments who specialise in such assessments. However, to standardise the approach across a bank, the concept of a credit score or grade has evolved. Each lending institution has its own internal scale of rating its borrower based on financial and non-financial parameters. The credit scoring/grading system is vital during not only the pre-sanction phase but also the post-sanction phase:

- During the **pre-sanction stage**, credit grades are utilised by the sanctioning authority to decide on whether or not to lend, the type of products to be extended, the limit to be extended, the margin at which the limit should be extended and the type of collateral required.
- At the **post-sanction stage**, the bank or financial institution should continuously monitor the client. The depth of the review can vary based on the credit grade assigned to the client and the level of precautions taken in the form of collateral.

Considering the significance of credit grading of a borrower, it has become imperative for banks and financial institutions to implement their own credit grading model which will fulfil the above-mentioned criteria, helping bank in monitoring and controlling the changes and trends in the risk level. This process ensures that banks' returns are optimal. The three-step process below is undertaken by banks during the pre-disbursal of loans and credit appraisal.

Step 1: Identification of risks

A credit grade is a combination of the financial and non-financial risk rating of the borrower. Mostly, banks have automated tools that give the credit grade as output when the required inputs are fed into the system. Some of the key relevant inputs to arrive at the credit grade are:

- **Financial parameters:** The data used should be the latest available and the projections considered should be on a conservative basis.
- **Key financial metrics:** Important elements such as the total debt of the client, profit after tax, total assets and sales trend should be looked into. For example, the sales to interest ratio indicates how much of the inflow derived from sales can be utilised to pay off the interest-related expenses. The higher this ratio is, the better the health of the client.
- **Applicability:** The applicability of these ratios is dependent on the size of the firm, the industry it belongs to and the facilities required. For example, if the client is a large corporate, then the bank should focus more on the capital structure of the client, size of the client, etc. If the client is an emerging mid-corporate, then the bank should focus more on the sales-related ratios and supplier- and debtor-related ratios.

The table below provides a few important ratios for deriving the client's credit grade:

Factor	Formula	Is a higher or lower ratio better?
EBITD to interest	EBITD / Interest expense	Higher
Sales to interest	Sales / Interest expense	Higher
Gearing ratio	(Total debt + associated loans) - cash items / Total assets	Lower
Debt servicing ratio	EBITDA / Interest expense	Higher
Capital structure	Total equity / Total tangible assets	Higher
Liquidity	(Net profit after tax + depreciation and amortisation) - other non-cash income	Higher
Net cash flow	Net cash after operations / Total liabilities	Higher

- **Non-financial parameters**

Non-financial risk assessment comprises a qualitative assessment of the creditworthiness of counterparties. Banks and financial institutions perform an intensive check on the client's background and of those linked to the client, after which they rate the obligator on a conservative approach basis. Some of the non-financial parameters are explained below:

- Industry of operation (industry risk): The company's performance could start dipping due to the competition in the market or a drop in the demand for products and services they offer. With the current market conditions, the importance of this category of risk has increased.
- Management of the client (management risk): Banks should not only look into the business of the borrower but also analyse the management influencing its business. This could be in terms of the experience of the management, succession plan or any adverse information such as frauds or criminal activities such as money laundering or terror financing.
- Secured lending (security risk): The credit grade of clients can be either enhanced or downgraded based on the type of security placed against the sanctioned limit. For example, if there is support from the parent or group company or the facility availed is cash backed, then the credit grade will either remain the same or will be enhanced as it is considered as a safe security. In case a facility sanctioned is backed by a sensitive stock or commodity, then the possibility of downgrading the credit grade is high as the price of these goods fluctuates and banks or financial institutes should have a conservative approach.

Step 2: Allocation of weights to the risk components

Once these risks are ascertained, they should be prioritised and weights should be assigned to arrive at a score that determines the credit grade of the borrower. For example, banks could follow the process below while allocating weights.

Step 1: Ranking the risks

Step 2: Allocation of weights. Each risk category can be further subdivided based on the key impact factors.

Rank	Risk category	Weights	Key factors
1	Financial risk	50%	Ratios such as: Leverage or gearing - 15% Profitability - 15% Interest coverage - 5% Liquidity - 15%
2	Industry risk	25%	Industry growth - 7% Market competition - 7% Demand and supply - 4% Government intervention - 4% Entry and exit barrier - 3%
3	Management risk	15%	Experience - 5% Succession plan - 5% Adverse information - 5%
4	Security risk	10%	Sensitive commodities - 5% Cash and others - 3% Support - 2%

Step 3: Computation of credit grade

Based on the algorithms to calculate the credit grade, banks decide the amount of loan that can be extended to a borrower based on the credit rating scale as per internal policies.

As discussed so far, the process of extending a loan to a borrower is an extensive and critical process undertaken by banks. The credit appraisal process needs to be continually evaluated so as not to miss out on any emerging risks in the borrowers. Continual monitoring, both before and after loan disbursal, can aid banks in reducing the growing number of non-performing assets across the industry.

There is an increasing trend of globalisation of banking regulations and techniques, and the Indian banking system is also urged to adopt to these changing practices in order to strengthen operations. One of the biggest challenges for Indian banks is the deterioration in asset quality and lack of reliable data to monitor asset quality across the industry.

At the entity level, banks need to perform in-depth credit investigation and better understand the business risks inherent in lending to customers. There is a need for improvement in KYC norms, at not just the procedural level but also a more holistic level.

At the industry level, banks need to closely understand the paradigm shifts in the economy and identify demand-supply gaps to diversify their loan portfolios. The global banking system has a sharp inclination towards the FinTech industry and a wave of technological change is sweeping across the industry. Indian banks need to take the leap towards digitisation to achieve economies of scale and employ cost-effective technologies such as cloud computing, big data and blockchain, cyber security, and digital infrastructure to integrate customer data across different banking platforms. This will enable banks to improve the quality of credit decision making.

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