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Module-B Unit-5

CAIIB PAPER-2

BANK Financial Management(BFM)

CAIIB Paper 2 (BFM) Module B Unit 5: Credit Risk

Credit Risk Management Framework

As in the case of market risk management, credit risk management also involves finding answer to four key questions.

- What are the risks?
- Which, when and how much risk to accept that results in improving bottom-line?
- How can we monitor and control credit risk?
- Can we reduce the risk? And, if so, then how?

Management processes are designed essentially to answer these questions. Accordingly, credit risk management processes are sub-divided into following four parts.

- Credit Risk Identification
- Credit Risk Measurement
- Credit Risk Monitoring and Control
- Credit Risk Mitigation Management of credit risk needs an organisation structure in place that can carry out the functions required for the purpose.

Organisation Structure

Organisation for credit risk management is created with the objective of achieving compatibility in risk and business policies and to ensure their simultaneous implementation in a consistent manner. It involves setting risk limits based on the objective measures of risk and simultaneously ensuring optimum risk adjusted return keeping in view the capital constraints. It is a question of bank's policy in balancing risks, returns and capital. Organisation for credit risk management should be able to achieve it. Usually, Credit Risk Management organisation would consist of:

- The Board of Directors
- The Risk Management Committee
- Credit Policy Committee (CPC)
- Credit Risk Management Department

The Board of Directors has the overall responsibility for management of risks. The Board articulates credit risk management policies, procedures, aggregate risk limits, review mechanisms and reporting and auditing systems. The Board decides the level of credit risk for the bank as a whole, keeping in view its profit objective and capital planning.

The Risk Management Committee is a Board level Sub-Committee. The responsibilities of Management Committee with regard to credit risk management aspects include the following:

- Setting guidelines for credit risk management and reporting

- Ensuring that credit risk management processes conform to the policy
- Setting up prudential limits and their periodical review
- Ensuring robustness of measurement of risk models
- Ensuring proper manning for the processes Management

Credit Policy Committee (CPC), also called Credit Control Committee/Credit Risk Management Committee (CRMC) deals with issues relating to credit policy and procedures and to analyse, manage and control credit risk on a bank wide basis. The Committee formulates policies on standards for presentation of credit proposals, financial covenants, rating standards and benchmarks, delegation of credit approving powers, prudential limits on large credit exposures, asset concentrations, standards for loan collateral, portfolio management, loan review mechanism, risk concentrations, risk monitoring and evaluation pricing of loans, provisioning, regulatory/legal compliance, etc.

Credit Risk Management Department (CRMD), which is independent of the Credit Administration Department, enforces and monitors compliance of the risk parameters and prudential limits set by the CPC/CRMC. The CRMD also lays down risk assessment systems, monitors quality of loan portfolio identifies problems and corrects deficiencies, develops MIS and undertakes loan review/audit. Department undertakes portfolio evaluations and conducts comprehensives studies on the environment to test the resilience of the loan portfolio.

Risk Identification

Credit risk arises from potential changes in the credit quality of a borrower.

It has two components:

- Default risk and
- Credit spread risk.

Default Risk

- Default risk is driven by the potential failure of a borrower to make promised payments, either partly or wholly. In the event of default, a fraction of the obligations will normally be paid. This is known as recovery the rate

Credit Spread Risk or Downgrade Risk

- If a borrower does not default, there is still risk due to worsening in credit quality. This results in the possible widening of the credit-spread. This is credit-spread risk. Usually this is reflected through rating downgrade. It is normally firm-specific.

Default risk and downgrade risk are transaction level risks. Risks associated with the credit portfolio as a whole are termed portfolio risks. Portfolio risk has two components

- Systematic or Intrinsic Risk
- Risk Concentration Risk

Systematic or Intrinsic Risk

- As we have seen in Para 7.47, **portfolio risk is reduced due to diversification. If a portfolio is fully diversified, i.e. diversified across geographies, industries, borrowers, markets, etc.,** equitably, then the portfolio risk is reduced to a minimum level. This minimum level corresponds to the risks in the economy which it is operating. This is systematic or intrinsic risk.

Concentration Risk

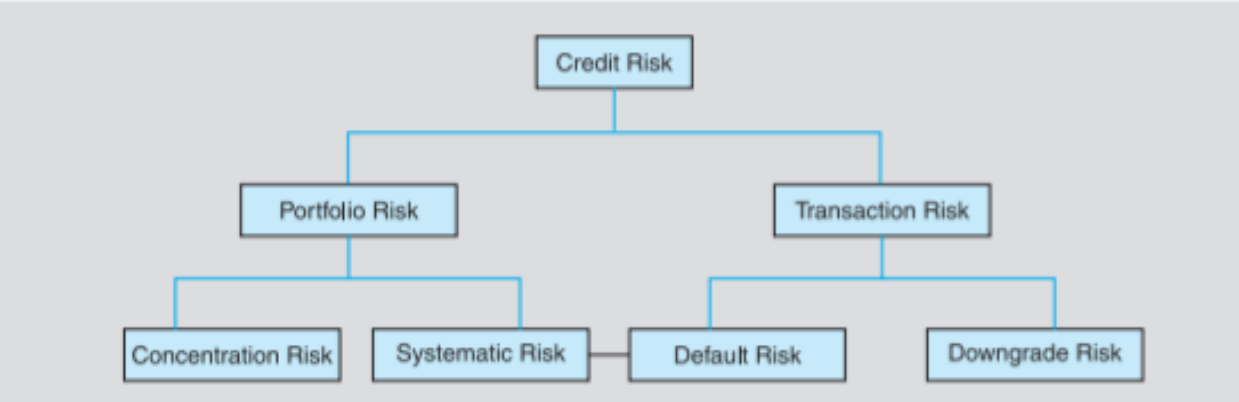
If the portfolio is not diversified that is to say that it has higher weight in respect of a borrower or geography or industry, etc., the portfolio gets concentration risk.

A portfolio is open to the systematic risk i.e., the risks associated with the economy. If economy as a whole does not perform well, the portfolio performance will be affected. That is why when an economy stagnates or faces negative or reduced growth, credit portfolio of banking industry as a whole shows indifferent performance. Credit portfolio having concentration in any segment would be affected if the segment does not perform well.

Measuring and managing credit risk, whether for loans, bonds or derivative securities, has become a key issue for financial institutions. The risk analysis can be performed either for stand-alone trades or for portfolios as a whole. Banks adopt the risk analysis in the following manner.

- Standalone analysis for Corporate exposures.
- Portfolio analysis for Retail lending exposures.

The following chart outlines financial risks in lending as shown in Figure:



Risk Measurement

Measurement of credit risk consists of

- Measurement of risk through credit rating/scoring;
- Quantifying the risk through estimating expected loan losses, i.e., the amount of loan losses that bank would experience over a chosen time horizon (through tracking portfolio behaviour over 5 or more years) and unexpected loan losses i.e. the amount by which actual losses exceed the expected loss (through standard deviation of losses or the difference between expected loan losses and some selected target credit loss quartile).

Credit Rating - Why is it Necessary?

Credit Rating of an account is done with the primary objective to determine whether the account, after the expiry of a given period, would remain a performing asset, i.e., it will continue to meet its obligation to its creditors, including Bank and would not be in default. In other words, credit rating exercise seeks to predict whether the borrower would have the capability to honour its financial commitment in future to the rest of the world.

A Credit Rating depicts the credit quality of the borrower and depicts his default**. A credit rating process normally would consist of the following parameters:**

- Financial Parameter.
- Management Parameter.
- Industry Parameter.
- Business Parameter,

Credit Risk Control and Monitoring

- **Risk taking through lending activities needs to be supported by a very effective control and monitoring mechanism, firstly because this activity is widespread, and secondly, because of very high share of credit risk in the total risk taking activity of a bank**. An elaborate and well-communicated policy at transaction level that articulates guidelines for risk taking, procedural guidelines and an effective monitoring system is necessary. This is also necessary to achieve the desired portfolio. Active portfolio management is required to keep up with the dynamics of the economy. It is also necessary to monitor it.
- Consequently, credit risk control and monitoring is directed both at transaction level and portfolio level.
- It must be mentioned here that an appropriate credit information system is the basic prerequisite for effective control and monitoring. A comprehensive and detailed MIS (Management Information System) and CIS (Credit Information System) is the backbone for an effective CRM System. There is also a need to review the existing MIS available from HO and branches and the applicability of data for analysis purposes. A detailed MIS and CIS structure should be set up and enforced for future data requirements.

Credit Risk Policies and Guidelines at Transaction Level

The instruments of Credit Risk Management at transaction level are:

- Credit Appraisal Process
- Risk Analysis Process
- Credit Audit and Loan Review
- Monitoring Process

There is a need to constantly improve the efficiency for each of these processes in objectively identifying the credit quality of borrowers, enhancing the default analysis, capturing the risk elements adequately for future reference and providing an early warning signal for deterioration in the credit risk of borrowers.

Credit risk taking policy and guidelines at transaction level should be clearly articulated in the Bank's Loan Policy Document approved by the Board. Standards and guidelines should be outlined for

- Delegation of Powers
- Powers Credit Appraisals
- Rating Standards and Benchmarks (derived from the Risk Rating System)
- Pricing Strategy
- Loan Review Mechanism

Credit Approving Authority

- Each Bank should have a carefully formulated scheme of delegation of powers. The banks should also evolve multi-tier credit approving system where the loan proposals are approved by an 'Approval Grid' or a Committee'. The 'Grid' or 'Committee', comprising at least 3 or 4 officers, may approve the credit facilities above a specified limit and invariably one officer should represent the CRMD, who has no volume and profit targets.

Credit Appraisal

- Credit appraisal guidelines include borrower standards, procedures for analyzing credit requirements and risk factors, policies on standards for presentation of credit proposals, financial covenants, rating standards and benchmarks, etc.
- This brings a uniformity of approach in credit risk taking activity across the organisation. Credit appraisal guidelines may include risk monitoring and evaluation of assets at transaction level, pricing of loans, regulatory/legal compliance, etc.

Prudential Limits

Prudential limits serve the purpose of limiting credit risk. There are several aspects for which prudential limits may be specified. They may include:

- Prudential limits for financial and profitability ratios such as current ratio, debt equity and return on capital or return on assets, debt service coverage ratio, etc.
- Prudential limits for credit exposure
- Prudential limits for asset concentration
- Prudential limits for large exposures
- Prudential limit for maturity profile of the loan book.

Prudential limits may have flexibility for deviations. The conditions subject to which deviations are permitted and the authority thereof should also be clearly spelt out in the Loan low Policy.

Risk Pricing

The pricing strategy for credit products should move towards risk-based pricing to generate adequate risk adjusted returns on capital. The Credit Spread should have a bearing on the expected loss rates and charges on capital.

Credit Control and Monitoring At Portfolio Level

Credit control and monitoring at portfolio level deals with the risk of a given portfolio, expected losses, requirement of risk capital, and impact of changing the portfolio mix on risk, expected losses and capital It also deals with the marginal and absolute risk contribution of a new position and diversification benefits that come out of changing the mix. It also analyses factors that affect the portfolio's risk profile.

The activities include --

- Identification of portfolio credit weakness in advance - through credit quality migrations.
- Moving from measuring obligor specific risk associated with individual credit exposures to measuring concentration effects on the portfolio as a whole.
- Evaluating exposure distribution over rating categories and stipulating quantitative ceilings on aggregate exposure in specified rating categories.
- Evaluating rating-wise distribution in various industries and setting corresponding exposure limits to contain concentration risk.
- Moving towards Credit Portfolio Value at Risk Models.

Some measures to maintain the portfolio quality are:

- Quantitative ceiling on aggregate exposure in specified rating categories.
- Evaluation of rating-wise distribution of borrowers in various industries, business segments, etc.

- Industry-wise and sector-wise monitoring of exposure performance. Where portfolio exposure to a single industry is badly performing, the banks may increase the quality standards for that specific industry.
- Target for probable defaults and provisioning requirements as a prudent planning exercise. For any deviation/s from the expected parameters, an exercise for restructuring of the portfolio should immediately be undertaken and if necessary, the entry-level criteria could be enhanced to insulate the portfolio from further deterioration.
- Undertake rapid portfolio reviews, stress tests and scenario analysis when external environment undergoes rapid changes (e.g., volatility in the forex market, economic sanctions, changes in the fiscal/monetary policies, general slowdown of the economy, market risk events, extreme liquidity conditions, etc.). Based on the findings of stress test, prudential limits, quality standards, etc., may be revised.
- Introduce discriminatory time schedules for review of borrowers.

Active Credit Portfolio Management

Motivation for active credit portfolio management comes from changing demand of traditional products and new business opportunities. Change in demand of traditional products has arisen due to

- Less demand due to disintermediation
- More supply due to capital mobility
- Lower returns and increased importance of risk

The motivation for active credit portfolio management also comes from new opportunities in the economy, such as:

- Pass through certificates
- Syndicated lending
- Project/structured finance

Essentially, new products have different types of risks as compared to traditional products. In addition, banks also have new tools to manage credit portfolio such as:

- Secondary loan trading
- Securitisation
- Credit derivatives

This calls for a business transformation plan - a gradual process with a well-articulated strategy and with a thorough understanding of markets and supported by

- Necessary infrastructure
- Appropriate policy development

- Human resource training
- Careful system selection
- Continuous testing and refinement

Controlling Credit Risk Through Loan Review Mechanism (LRM)

LRM is also called as Credit Audit. LRM an effective tool for constantly evaluating the quality of loan book and to bring about qualitative improvements in credit administration. Loan Review Mechanism is used for large value accounts with responsibilities assigned in various areas such as, **evaluating effectiveness of loan administration, maintaining the integrity of credit grading process, assessing portfolio quality, etc.**

The main objectives of LRM are:

- To promptly identify loans, which develop credit weaknesses and initiate timely corrective action.
- To evaluate portfolio quality and isolate potential problem areas.
- To provide information for determining adequacy of loan loss provision.
- To assess the adequacy of and adherence to, loan policies and procedures, and to monitor compliance with relevant laws and regulations.
- To provide top management with information on credit administration, including credit sanction process, risk evaluation and post-sanction follow up.

Qualification and Independence

- **The Loan Review Officers should have sound knowledge in credit appraisal, lending practices and loan policies of the bank**. They should also be well-versed in the relevant laws/regulations that affect lending activities.
- The independence of Loan Review Officers should be ensured and the findings of the reviews should also be reported directly to the Board or Committee of the Board.

Frequency and Scope of Reviews

- **The Loan Reviews are designed to provide feedback on effectiveness of credit sanction and to identify incipient deterioration in portfolio quality.**
- Reviews of high value loans should be undertaken usually within three months of sanction/renewal or more frequently when factors indicate a potential for deterioration in the credit quality.

Depth of Reviews

The loan reviews should focus on:

- Approval process
- Accuracy and timeliness of credit ratings assigned by loan officers

- Adherence to internal policies and procedures, and applicable laws/regulations
- Compliance with loan covenants
- Post-sanction follow us
- Sufficiency of loan documentation
- Portfolio quality
- Recommendations for improving portfolio quality

Credit Risk Mitigation

- **Credit risk mitigation is an essential part of credit risk management. This refers to the process through which credit risk is reduced or it is transferred to counterparty**. Strategies for risk reduction at transaction level differ from that at portfolio level.
- At transaction level banks use a number of techniques to mitigate the credit risks to which they are exposed. They are mostly traditional techniques and need no elaboration. They are, for example, exposures collateralised by first priority claims, either in whole or in part, with cash or securities, or an exposure guaranteed by a third party. Recent techniques include buying a credit derivative to offset credit risk at transaction level.

Securitisation

- **Securitisation refers to a transaction where financial securities are issued against the cash flow generated from a pool of assets**. Cash flows arising out of payment of interest and repayment of principal are used to service interest and repayment of financial securities.
- Usually an SPV - special purpose vehicle is created for the purpose. Originating bank - that is the bank which has originated the assets -- transfers the ownership of such assets to the SPV. The SPV issues financial securities and has the responsibility to service interest and repayments on such financial instruments.

Credit Derivatives (CDS)

For most banks, particularly Indian banks, the single largest source of earnings and perhaps earnings volatility also are on account of credit risk. The traditional means to deal with credit risk include lending policies, credit approval processes, discretionary power structure, collateral and guarantees, concentration limits (with regard to single or group borrowers, industries or geographic regions), documentation, etc.

Credit Derivatives Defined

- **A credit derivative is an over-the-counter bilateral contract between two or more counterparties that provide for transfer of risks in a credit asset or credit portfolio without necessarily transferring the underlying asset from the books of the originator.**

- Generally, credit derivatives transfer risks in a credit asset without transferring the underlying asset themselves from the books of the originator. Hence, they are off-balance sheet financial instruments. All credit assets (loans, bonds, account receivable, financial leases, etc.) are bundles of risk and rewards.

Credit Default Swaps (CDS)

- **A Credit default swap is a transaction in which a credit hedger (PB) pays a periodic premium to an investor (PS) in return for protection against a credit event experienced on a reference obligation, (i.e., the underlying credit that is being hedged).**
- Credit events are ISDA defined credit events and include six events, namely - bankruptcy, obligation acceleration, obligation default, failure to pay, repudiation/moratorium and restructuring.

Total Return Swaps (TRS)

- **In a total return swap, the PB swaps with the PS, total actual return (coupon capital appreciation depreciation) on an asset in return for a premium. The premium is arrived at by adding a spread to a reference rate like LIBOR**. Thus, in a TRS, the protection seller is able to synthetically create an exposure to the reference asset without actually lending to it.
- A total return swap represents an off-balance sheet replication of a financial asset such as a loan or bond Whereas credit default swaps capture only credit risk, total return swaps involved the transfer of the total economic return of the asset (i.e., both credit and market risks.)

Credit Linked Notes (CLN)

- **Credit default swaps (CDS) are generally off-balance sheet items and are not funded exposures**. Credit linked notes are on-balance sheet equivalents of CDS, which combine credit derivatives with normal bond instruments and thus convert credit derivatives (generally an OTC instrument) into capital market instruments.

Credit Spread Options

- **Credit Spread options enable credit hedgers to acquire protection from an unfavourable migration or Credit spread risk of an asset, as measured by a widening of its credit spread.** Credit spread options transfer credit spread risk from the credit spread PB to an investor (PS), in return for an upfront or periodic payment of premium.

Example

Transferring default risks; Imagine that an A-rated oil company is planning to arrange a fully drawn one-year credit for Rs. 1,600 Crores and has invited few

banks into the deal. The company requested the bank to commit Rs. 600 Crores but the bank's credit portfolio management team has placed a limit of Rs. 200 Crores as they are concerned about the bank's significant exposure to the oil company.

Solution: The bank can commit to the request and arrange a credit default swap with another bank for Rs. 400 Crores. The bank can approach foreign or regional banks that are at a credit risk origination disadvantage and transfer the credit risk of the credit without transferring the loan itself.

The advantages of this approach include:

- The bank-client relationship is preserved.
- Alternative strategies, such as sale in the secondary markets or participation, may have adverse consequences for the bank-client relationship.
- The bank enjoys, the fee-based income associated with the higher level of commitment
- The hedging bank has significantly diversified its risk, only experiencing a default if both the oil company and counterparty bank fail jointly and concurrently to perform. This joint probability of default is likely to be quite low.
- The return on capital of the hedged position can be significantly higher.

Hedging Pitfalls in Practice

Transaction Origination

- Successful credit derivatives dealers endeavour to.
- Establish client/product suitability.
- Identify and fully appreciate end-user motivations and portfolio.
- Provide end users with useful feedback and help manage expectations about the timing of transactions.
- Understand that transaction terms are generally indicative and not firm.
- Appreciate that dealers may have limits on their appetite for certain credits.
- Appreciate the limitations and liquidity restraints of the developing credit derivatives market.

Transactions Structuring

Occurs once a credit derivatives transaction has been originated. The major terms and conditions/issues to confirm at this stage include:

- All settlement methods are agreed and market disruption clauses have been considered.
- The hedging strategy employed is the most efficient vehicle in terms of funding, relationship issues and capital treatment
- If the reference asset and the underlying credit risk are one and the same, no residual basis risk remains (or, if it does, is identified and priced accordingly). In

addition, a thorough check of the reference asset is required to identify any risk of pre-payment, extension, sinking fund or call features.

- The assignability of the unvetted underlying assets is established (otherwise alternative settlement techniques need to be established).
- The parties have a thorough understanding of any materiality tests requirements, especially in the case of non-investment grade credits.
- If a credit-linked note is being issued by a founder, it must confirm that credit events in the credit default swap confirmation are mirrored in the credit-linked note pricing supplement.
- Credit events are appropriate for the situation.

Transactions Documentation

All transaction structuring issues must be resolved prior to documentation. A successful documentation process includes:

- Presentation by credit derivatives trading to documentation of a transaction term sheet setting out terms and conditions.
- Good communication between all members of the credit hedging team.
- An appreciation of transaction objectives and goals.
- Problem-solving approach with the credit derivatives trading desk, the end-users and other internal partners
- A well thought-out transaction template or use of ISDA-sponsored transaction confirmation.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