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Module-D BFM

CAIIB PAPER-2

Balance Sheet Management

CAIIB Paper 2 (BFM) Module-D Balance Sheet Management

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CAIIB BFM Module D Unit 1: Components of Assets and Liabilities in Bank's Balance Sheet and their Management

Introduction

- **It has always been the function or responsibility of Treasury and other financial strategic departments.** However, of late Asset Liability Management departments are being established and asset and liability committees are being formed within financial institutions.
- These committees are often given extraordinary powers regarding the mix and match of assets and liabilities and have large influence in winding up activities which do not fit business strategy.

Components Of A Bank's Balance Sheet

Like any balance sheet of any other firm, a bank's balance sheet also comprises of sources and uses of funds. Liabilities and net worth form the sources of the bank's funds, whereas assets represent uses of funds to generate revenue for the bank.

The summarised form and its components are:

Sources of Funds	Application of Funds

Capital Reserves Deposits Borrowings Other Liabilities and provisions TOTAL	Cash In Hand and Balance with RBI Balances with Banks and Money at Call and Short Notice Investments Advance Fixed Assets Other Assets TOTAL

Components of Liabilities

Capital

- Capital represents the owners' stake in a bank and it serves as a cushion for depositors and creditors to fall back in case of losses. It is considered to be a long-term source of funds. Minimum capital requirement for the domestic and foreign banks is prescribed by Reserve Bank of India.

Reserve and Surplus

The components under this item include statutory reserves, capital reserves, share premium, revenue and other reserves and balance in profit and loss account.

Deposits: The main source of funds for the banks is deposits. The deposits are broadly classified as deposits payable on demand which include current deposits , overdue deposits , call deposits, etc. Second category is savings bank deposits and lastly the term deposits which are repayable after a specified period, known as fixed deposits, short deposits and recurring deposits.

Borrowings: Borrowings in India consist of borrowings/refinance obtained from the RBI, other commercial banks and other institutions and agencies like IDBI, EXIM Bank of India, NABARD, etc.

Other Liabilities and Provisions: The other liabilities of the bank are grouped into the following categories:

- **Bills Payable:** This includes drafts, telegraphic transfers, travellers cheques, mail transfers payable, payslips, bankers' cheques and other miscellaneous items.
- **Inter-Office Adjustments:** The credit balance of the net inter-office adjustments.
- **Interest Accrued:** The interest accrued but not due on deposits and borrowings.
- **Others:** All other liability items like provision for income tax, tax deducted at source, interest tax, provisions, etc.

Components of Assets

Cash and Balances with RBI

All cash assets of banks are listed under this account and it forms the most liquid account held by any bank. ***The cash assets consist of the following:***

- **Cash in Hand:** This asset item includes cash in hand, including foreign currency notes and cash balances in the overseas branches of the bank.
- **Balances With RBI:** Cash account also includes the balances held by each hank with RBI in order to meet statutory cash reserve requirements (CRR) and also surplus cash parked with RBI over and above CRR requirement to meet emergency funding requirements.
- **Balances with Banks and Money at Call and Short Notice:** The bank balances include the amount held by the bank in the current accounts and term deposit accounts with other banks. Under call money market, funds are transacted on an overnight basis and under notice money market, funds are transacted for a period between 2 days and 14 days.

Investments

- A major asset item in the balance sheet of a bank is investments in various kinds of securities. These include investments in government securities, approved securities, shares, debentures and bonds, and/or joint subsidiaries ventures and other investments.

Advances

The most important asset item on a bank's balance sheet is advances. These advances which represent the credit extended by a bank to its customers, forms a major part of the assets for all the banks.

- **Cash credits Overdrafts and Loans Repayable on Demand**. Items under this category represent advances - which are repayable on demand though they may have a specific due date.
- **Term Loans.** All term loans extended by a bank are included here. These advances also have a specific due date, but they will not become payable on demand. In short, most of the term loans are repaid in the form of EMIs (Equated Monthly Instalments).
- **Bills Purchased and Discounted**. This item includes the bills discounted purchased by banks from the client irrespective of whether they are clean/documentary or domestic/foreign.
- **Secured/unsecured Advances**. Based on the underlying security, advances are classified into the following categories:

- **Secured by Tangible Assets:** All advances or part of advances, within/outside India, which are secured by tangible assets will be considered as secured assets.
- **Covered by Bank/Government Guarantees**: Advances in India and outside India to the extent they are covered by guarantees of Indian and foreign governments/banks and DICGC and ECGC will be included here.
- **Unsecured Advances:** All advances that do not have any security and which do not appear in the above two categories will come under this category.

Fixed Assets: All fixed assets of a bank, e.g., immovable properties, premises, furniture and fixtures, hardware, motor vehicles are classified into fixed assets.

Other Assets: The remainder of the items on the asset side of a bank's balance sheet are categorised as other assets. The miscellaneous assets that appear are:

- **Inter-office Adjustments:** Debit balance of the net position or the interoffice accounts, domestic as well as overseas.
- **Interest Accrued:** This will be the interest accrued, but not due on investments and advances and interest due, but not collected on investments.
- **Tax Paid in Advance/tax Deducted at Source:** This includes amount of tax deducted at source on securities and the advance tax paid to the extent that they are not set-off against relative tax provisions.
- **Stationery and Stamps:** Stock of stationery on hand is considered under this head of account.
- **Non-Banking Assets Acquired in Satisfaction of Claims.** Items under this account include immovable properties/ tangible assets which are acquired by a bank in satisfaction of the bank's claims on others.
- **Others:** Other items primarily include claims that are in the form of clearing items, unadjusted debit balances representing additions to assets and deductions from liabilities and advances provided to the employees of a bank.

Contingent Liabilities

A bank's obligations under issuance of letter of credit, guarantees and acceptances on behalf of constituents and bills accepted by the bank on behalf of its customers are reflected under contingent liabilities. Other contingent liabilities include claims against the bank not acknowledged as debts, liability for partly paid-up investments, liability on account of outstanding forward exchange contracts and other items like arrears of cumulative dividends, bills rediscounted, underwriting, commitments, estimated amount of contracts remaining to be executed on capital account and not provided for, etc.

Bank's Profit and Loss Account

A bank's profit and loss account has following components:

- **Income:** which includes Interest income and other income.

- **Expenses:** which includes Interest expended, Operating expenses and Provisions and Contingencies:

Income

Interest income

- Interest/ Discount on Advances/ Bills
- Income on investments
- Interest on Balances with RBI and Other Interbank Funds

Other income

- Commission, Exchange and Brokerage
- Profit on sale or investment
- Profit on Revaluation of investment
- Profit on sale of land, Building and other Assets
- Profit on Exchange Transactions
- Misc income

Expenses

- Interest on Deposits
- Interest on RBI/Interbank Borrowings
- Others

Operating Expenses

- Payments to and Provisions for Employees
- Rent, Taxes and Lighting
- Printing and Stationery
- Advertisement and Publicity
- Depreciation on Bank's Property
- Director's fees, Allowances and Expenses
- Law-charges
- Postage
- Repairs and Maintenance
- Insurance

What Is Asset Liability Management?

- Because the business of banking involves the identifying, measuring, accepting and managing the risk, the heart **of bank financial management is risk management. One of the most important risk-management functions in banking is Asset Liability Management (ALM).**
- Asset Liability Management is concerned with strategic balance sheet management involving risks caused by changes in interest rates, exchange rate,

credit risk and the liquidity position of a bank. With profit becoming a key-factor, it has now become imperative for a bank to move away from partial asset management (Credit and Non Performing Asset) and partial liability management, towards an integrated balance sheet management where all the components of balance sheet and its different maturity mix will be looked at from the profit angle of the bank.

- Asset Liability Management (ALM) is the act of planning, acquiring, and directing the flow of funds through an organisation. The ultimate objective of this process is to generate adequate/stable earnings and to steadily build an organisation's equity over time, while taking reasonable and measured business risks.

In brief ALM

- Concerned with strategic balance sheet management
- Match between assets and liabilities in Balance Sheet
- Risks like credit, market, liquidity, interest etc. stem from mismatch between Assets & Liabilities
- ALM is not to avoid risk but to manage risk sustaining profitability
- Periodic monitoring of risk exposures involving collecting and analysing information
- Ability to anticipate, forecast and to act so as to maximise bank's business to profit
- Altering Assets & Liabilities portfolio in a dynamic way to manage risks
- Involves judgement and decision making
- ALM involves Planning, Directing and Controlling the flow, mix, cost and yield of the consolidated funds of bank
- Assesses various asset mixes, funding combinations, price volume relations and their implications on Liquidity, Income and Capital ratio
- Planning procedure which accounts for all assets and liabilities of a bank by rate, amount and maturity

Significance Of Asset Liability Management

Some of the reasons for growing significance of Asset Liability Management are:

- **Volatility:** Deregulation of financial system changed the dynamics of financial markets. The vagaries of such free economic environment are reflected in interest rate structures, money supply and the overall credit position of the market, the exchange rates and price levels.
- **Product Innovation**: The second reason for growing importance of ALM is the rapid innovations taking place in the financial products of the bank. While there were some innovations that came as passing fads, others have received tremendous response. In several cases, the same product has been repeated with certain differences and offered by various banks (normally called as old wine in

new bottle). Whatever may be features of the products, most of them have an impact on the risk profile of the bank thereby enhancing the need for ALM. For example, Flexi-deposit facility.

- **Regulatory Environment:** At the international level, Bank for International Settlements (BIS) provides a framework for banks to tackle the market risks that may arise due to rate fluctuations and excessive credit risk. Central Banks in various countries (including Reserve Bank of India) have issued frameworks and guidelines for banks to develop Asset Liability Management policies.
- **Management Recognition:** All the above-mentioned aspects forced bank managements to give a serious thought to effective management of assets and liabilities. The managements have realised that it is just not sufficient to have a very good franchise for credit disbursement, nor is it enough to have just a very good retail deposit base. In addition to these, a bank should be in a position to relate and link the asset side with the liability side. And this calls for efficient asset-liability management.

There is an increasing awareness in the top management that banking is now a different game altogether since all risks of the game have changed.

Purpose and Objectives Of Asset Liability Management

An effective Asset Liability Management technique aims to manage the volume, mix, maturity, rate sensitivity, quality and liquidity of assets and liabilities as a whole so as to attain a predetermined acceptable risk/reward ratio. Thus, the purpose of Asset Liability Management is to enhance the asset quality; quantify the risks associated with the assets and liabilities and further manage them. ***Such a process will involve the following steps:***

- Reviewing the interest rate structure and comparing the same to the interest/product pricing of both liquidity assets and liabilities.
- Examining the loan and investment portfolios in the light of the foreign exchange risk and liquidity risk that might arise.
- Examining the credit risk and contingency risk that may originate either due to rate fluctuations or otherwise and assess the quality of assets.
- Reviewing the actual performance against the projections made and analysing the reasons for any effect on the spreads.

The Asset Liability Management techniques so designed to manage various risks, primarily aim to stabilise the short-term profits, long-term earnings and long-term substance/quality of the bank. ***The parameters that are selected for the purpose of stabilising Asset Liability Management of banks are:***

- Net Interest Income (NII)
- Net Interest Margin (NIM)
- Economic Equity Ratio

A brief description of these parameters is given below:

Net Interest Income (NII)

The impact of volatility on the short-term profit is measured by Net Interest Income.

Net Interest Income = Interest Income - Interest Expenses.

In order to stabilise short-term profits; banks have to minimise fluctuations in the NII.

Net Interest Margin (NIM)

Net Interest Margin is defined as net interest income divided by average total assets.

Net Interest Margin (NIM) = Net Interest Income/Average total Assets.

Net Interest Margin can be viewed as the 'Spread' on earning assets.

The net income of banks comes mostly from the spreads maintained between total interest income and total interest expense. The higher the spread, the more will be the NIM. There exists a direct correlation between risks and return. As a result, greater spreads only imply enhanced risk exposure. But since any business is conducted with the objective of making profits and achieving higher profitability is the target, it is the management of risks and not risk elimination, that holds the key to success.

Economic Equity Ratio

The ratio of the shareholders' funds to the total assets measures the shifts in the ratio of owned funds to total funds. This fact assesses the sustenance capacity of the bank.

Objectives of ALM

At macro-level, Asset Liability Management leads to the formulation of critical business policies, efficient allocation of capital and designing of products with appropriate pricing strategies. And at micro-level the objectives of Asset Liability Management are two folds. It aims at profitability through price matching while ensuring liquidity by means of maturity matching.

- **Price Matching** basically aims to maintain spreads by ensuring that the deployment of liabilities will be at a rate higher than the costs. This exercise would indicate whether the institution is in a position to benefit from rising interest rates by having a positive gap (assets > liabilities) or whether it is in a position to benefit from declining interest rates by a negative gap (liabilities > assets).
- **Liquidity** is ensured by grouping the assets/liabilities based on their maturing profiles. The gap is then assessed to identify future financing requirements. However, there are often maturity mismatches, which may to a certain extent affect the expected results.

ALM as Co-Ordinated Balance Sheet Management

The asset liability management function can be viewed in terms of two-stage approach to balance sheet financial management as follows:

Stage 1

Specific Balance Sheet Management Functions

Asset side Management will include:

- Reserve position management
- Liquidity management
- Investment/Security Management
- Loan Management
- Fixed-Assets Management

Liability side Management will include:

- Liability Management
- Reserve Position Management
- Long-Term Management (Notes and Debentures)
- Capital Management

Stage 2

Income-Expense Functions

Profit = Interest Income - Interest expense - provision for loan loss+ non-interest revenue - non-interest expense – taxes

Banks are required to formulate policies to achieve following objectives of Asset Liability Management:

- Spread Management
- Loan Quality
- Generating fee income and service charges
- Control of non-interest operating expenses
- Tax Management
- Capital Adequacy

CAIIB Paper 2 (BFM) Module D Unit 2: Capital Adequacy – The Basel Norms

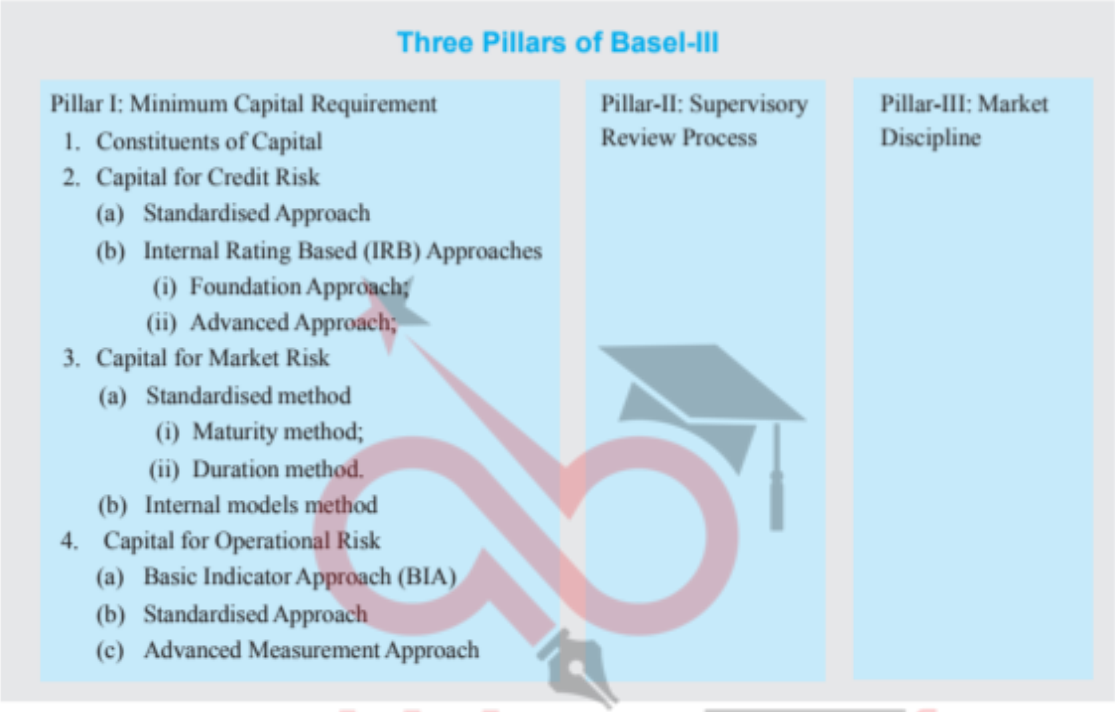
Scope Of Application

- The revised capital adequacy norms are applicable uniformly to all Commercial Banks (except Cooperative Banks, Local Area Banks and Regional Rural Banks), both at the solo level (global position) as well as at the consolidated level. A

Consolidated bank is defined as a group of entities where a licensed bank is the controlling entity.

- A consolidated bank will include all group entities under its control, except the exempted entities. A consolidated bank may exclude group companies, which are engaged in insurance business and businesses not pertaining to financial services. A consolidated bank should maintain a minimum Capital to Risk-weighted Assets Ratio (CRAR) as applicable to a bank on an ongoing basis.

Three Pillars of Basel-III



PILLAR-I: Minimum Capital Requirements

- The capital ratio continues to be calculated using the definition of regulatory capital and risk-weighted assets. The definition of eligible regulatory capital largely continues to be as **defined in the earlier accord of 1988** and amended to include Tier-III capital as prescribed **in January 96 and September 97.**
- Thus the term capital would include Tier-I or core capital, Tier-II or supplemental capital, and Tier-III capital. Tier- III capital, provided under the Basel II guidelines which took care of market risk of the banks, has since been phased out with the introduction of Basel III guidelines. **The total capital ratio must not be lower than 8% (9% in India).**
- **Core capital consists of paid up capital, free reserves and unal**located surpluses, less specified deductions. Any capital requirement arising in respect of credit and counter¬party risk needs to be met by Tier-I and Tier-II capital. Supplementary capital comprises subordinated debt of more than five years' maturity, loan loss reserves, revaluation reserves (which is now part of Tier-I

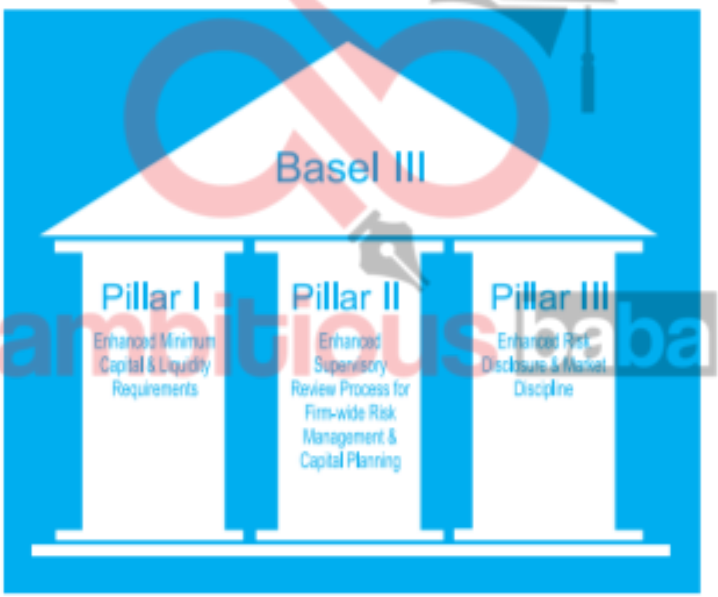
capital in India), investment fluctuation reserves, and limited life preference shares. **Tier-II capital is restricted to 100% of Tier-I capital as before**.

- The scope of risk weighted assets is expanded to include certain additional aspects of market risk and also operational risk. The area of operational risk is brought under the ambit of risk-weighted assets for the first time. **Total risk weighted assets include the capital requirement for market risk and operational risk multiplied by 12.5,** i.e. reciprocal of **the minimum capital requirement of 8% along with risk weighted assets for credit risk.**

Total Risk weighted assets = Risk weighted assets for credit risk +12.5*Capital requirement for market risk+12.5*Capital requirement for operational risk. The individual component of risk-weighted assets is dealt with in detail in Module B, (Risk Management).

Thus the Basel-III accord, which has undergone a subtle change from Basel II, does not merely prescribe minimum capital requirement, but envisages processes of supervisory review and market discipline. The revised framework is more risk sensitive than the 1988 accord. There are incentives for those banks, which have better risk management capabilities.

The Three Pillars of Basel III is given in the form of a diagram below:



PILLAR 2 – Supervisory Review Process

The capital adequacy ratio prescribed by the RBI under the Pillar 1 of the Framework is only the regulatory minimum level, addressing only the three specified risks (viz., credit, market and operational risks) and holding additional capital might be necessary for the banks, on account of

The possibility of some underestimation of risks under the Pillar 1 and The actual risk exposure of a bank vis-a-vis the quality of its risk management architecture. Illustratively, some of the risks that the banks are generally exposed to, but which are not ***captured or not fully captured in the regulatory CRAR would include:***

- Interest rate risk in the banking book, which is part of market risk.
- Credit concentration risk, which is normally part of credit risk.
- Liquidity risk, for convenience sake included as part of market risk.
- Settlement risk, which is also called as counter-party risk and is part of credit risk.
- Reputational risk, which is equivalent to operational risk.
- Strategic risk, which is equivalent to operational risk.
- Risk of under-estimation of credit risk under the Standardised approach – Credit risk.
- "Model risk" i.e., the risk of under-estimation of credit risk under the IRB approaches – Credit risk.
- Risk of weakness in the credit-risk mitigants – Credit risk.
- Residual risk of securitisation, etc. – can be part of Credit and Market risk.
- Climate Risk
- Payment & Settlement Risk

It is therefore, only appropriate that the banks make their own assessment of their various risk exposures, through a well-defined internal process, and maintain an adequate capital cushion for such risks. Further it is recognised that there is no one single approach for conducting the ICAAP and the market consensus in regard to the best practice for undertaking ICAAP, which is yet to emerge.

The ICAAP document should include the capital adequacy assessment and projections of capital requirement for the ensuing year, along with the plans and strategies for meeting the capital requirement and should also be approved by the Board.

Guidelines for the SRP of the RBI and the ICAAP of the Banks

While the Basel-I framework was confined to the prescription of only minimum capital requirements for banks, the Basel-II framework expanded this approach not only to capture certain additional risks in the minimum capital ratio, but also includes two additional areas – the Supervisory Review Process and Market Discipline through increased disclosure requirements for banks. The Basel III framework has also maintained the same approach. Thus,

The Basel Capital Adequacy Framework rests on the following three mutually-reinforcing pillars:

- **Pillar 1: Minimum Capital Requirements** – which prescribes a risk-sensitive calculation of capital requirements that, for the first time, explicitly includes operational risk in addition to market and credit risk.
- **Pillar 2: Supervisory Review Process (SRP)** – which envisages the establishment of suitable risk management systems in banks and their review by the supervisory authority.
- **Pillar 3: Market Discipline** – which seeks to achieve increased transparency through expanded disclosure requirements for banks.

The Basel Committee has also laid down the following four key principles in regard to the SRP envisaged under Pillar 2:

- **Principle 1**: Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels.
- **Principle 2:** Supervisors should review and evaluate the banks' internal capital adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with the regulatory capital ratios. Supervisors should take appropriate supervisory action if they are not satisfied with the result of this process.
- **Principle 3:** Supervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require the banks to hold capital in excess of the minimum.
- **Principle 4:** Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a particular bank and should require rapid remedial action if capital is not maintained or restored.

Banks' Responsibilities

- Banks should have in place a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels (Principle 1)
- Banks should operate above the minimum regulatory capital ratios (Principle 3)

Supervisors' Responsibilities

- Supervisors should review and evaluate a bank's ICAAP. (Principle 2)
- Supervisors should take appropriate action if they are not satisfied with the results of this process. (Principle 2)
- Supervisors should review and evaluate a bank's compliance with the regulatory capital ratios. (Principle2)
- Supervisors should have the ability to require banks to hold capital in excess of the minimum. (Principle 3)
- Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels. (Principle 4)
- Supervisors should require rapid remedial action if capital is not maintained or restored. (Principle 4)

ICAAP to be a Forward-looking Process

- The ICAAP should be forward looking in nature, and thus, should take into account the expected/ estimated future developments such as strategic plans, macro-economic factors, etc., including the likely future constraints in the availability and use of capital.
- As a minimum, the management of a bank shall develop and maintain an appropriate strategy that would ensure that the bank maintains adequate capital

commensurate with the nature, scope, scale, complexity and risks inherent in the bank's on-balancesheet and off-balance-sheet activities, and should demonstrate as to how the strategy dovetails with the macro-economic factors.

- Thus, the banks shall have an explicit, Board-approved capital plan which should spell out the institution's objectives in regard to level of capital, the time horizon for achieving those objectives, and in broad terms, the capital planning process and the allocate responsibilities for that process.

The plan shall outline:

- The bank's capital needs;
- The bank's anticipated capital utilisation;
- The bank's desired level of capital;
- Limits related to capital;
- A general contingency plan for dealing with divergences and unexpected events.

ICAAP to be a Risk-based Process

- The adequacy of a bank's capital is a function of its risk profile. Banks shall, therefore, set their capital targets, which are consistent with their risk profile and operating environment.
- At a minimum, a bank shall have in place a sound ICAAP, which shall include all material risk exposures incurred by the bank. There are some types of risks (such as reputation risk and strategic risk) which are less readily quantifiable; for such risks, the focus of the ICAAP should be more on qualitative assessment, risk management and mitigation than on quantification of such risks.
- Banks' ICAAP document should clearly indicate the risks for which a quantitative measure is warranted, and the risks for which a qualitative measure is considered to be the correct approach.

An Illustrative Outline of the ICAAP Document

What is an ICAAP document?

- The ICAAP Document would be a comprehensive paper furnishing detailed information on the ongoing assessment of the bank's entire spectrum of risks, how the bank intends to mitigate those risks and how much current and future capital is necessary for the bank, reckoning other mitigating factors.
- The purpose of the ICAAP document is to apprise the Board of the bank on these aspects as also to explain to the RBI the bank's internal capital adequacy assessment process and the banks' approach to capital management. The ICAAP could also be based on the existing internal documentation of the bank.
- The ICAAP document submitted to the RBI should be formally approved by the bank's Board. It is expected that the document would be prepared in a format that would be easily understood at the senior levels of management and would contain all the relevant information necessary for the bank and the RBI to make

an informed judgment as to the appropriate capital level of the bank and its risk management approach.

- Where appropriate, technical information on risk measurement methodologies, capital models, if any, used and all other work carried out to validate the approach (e.g. board papers and minutes, internal or external reviews) could be furnished to the RBI as appendices to the ICAAP Document.

Contents

The ICAAP Document should contain the following sections:

- Executive Summary
- Background
- Summary of Current and Projected Financial and Capital Positions
- Capital Adequacy
- Firm-wide Rick Oversight and Specific Aspects of Risk Management
- Key Sensitivities and Future Scenarios
- Aggregation and Diversification
- Testing and Adoption of the ICAAP
- Use of the ICAAP within the Bank

PILLAR 3 – Market Discipline

- Banks' disclosures should be consistent with how senior management and the Board of directors assess and manage the risks of the bank. Under Pillar 1, banks use specified approaches/methodologies for measuring the various risks they face and the resulting capital requirements.
- The key idea behind various types of disclosures by banks to the market is to make the market, when it possesses full and critical information about a bank, a disciplinary agent thereby exercising a salutary effect on the bank in particular and the market in general.
- Market Discipline leads to better Corporate Governance. Corporate governance is the system of rules, practices and processes by which a company/bank is directed and controlled. Market discipline contributes to a safe and sound banking environment. That is the reason the 19th Century Victorian Banker and Economist Walter Bagehot said,' A well-run bank needs no capital. No amount of capital will rescue a badly run bank'.

Guiding Principles for Banks' Pillar 3 Disclosures

The Basel Committee on Banking Supervision (BCBS) has agreed upon the following five guiding principles on Pillar 3 disclosures:

- Principle 1: Disclosures should be clear.
- Principle 2: Disclosures should be comprehensive.
- Principle 3: Disclosures should be meaningful to users.
- Principle 4: Disclosures should be consistent over time.
- Principle 5: Disclosures should be comparable across banks.

Scope and Frequency of Disclosures

Pillar 3 applies at the top on consolidated level of the banking group to which the Capital Adequacy Framework applies. Disclosures related to individual banks within the groups would not generally be required to be made by the parent bank. An exception to this arises in the disclosure of capital ratios by the top consolidated entity where an analysis of significant bank subsidiaries within the group is appropriate, in order to recognise the need for these subsidiaries to comply with the Framework and other applicable limitations on the transfer of funds or capital within the group. Pillar 3 disclosures will be required to be made by the individual banks on a stand-alone basis when they are not the top consolidated entity in the banking group. Banks are required to make Pillar 3 disclosures at least on a half yearly basis, irrespective of whether financial statements are audited, with the exception of following disclosures:

- Capital Adequacy;
- Credit Risk: General Disclosures for All Banks; and
- Credit Risk: Disclosures for Portfolios Subject to the Standardised Approach.

The disclosures as indicated at (i), (ii) and (iii) above will be made at least on a quarterly basis by banks.

All disclosures must either be included in a bank's published financial results/statements or, at a minimum, must be disclosed on bank's website. If a bank finds it operationally inconvenient to make these disclosures along with published financial results/statements, the bank must provide in these financial results/statements, a direct link to where the Pillar 3 disclosures can be found on the bank's website. The Pillar 3 disclosures should be made concurrent with publication of financial results/statements. A common template is to be used by banks to report the details of their regulatory capital after March 31, 2017 which is designed to meet the Basel III requirement to disclose all regulatory adjustments.

Validation

The disclosures should be subjected to adequate validation. Since information in the annual financial statements would generally be audited, the additional material published with such statements must be consistent with the audited statements. In addition, supplementary material (such as Management's Discussion and Analysis) that is published should also be subjected to sufficient scrutiny (e.g., internal control assessments, etc.) to satisfy the validation issue. Presently, Pillar 3 disclosures will not be required to be audited by an external auditor, unless specified.

Materiality

A bank should decide which disclosures are relevant for it based on the materiality concept. Information would be regarded as material if its omission or misstatement could change or influence the assessment or decision of a user relying on that information for the purpose of making economic decisions.

Proprietary and Confidential Information

Proprietary information encompasses information (for example on products or systems), that if shared with competitors would render a bank's investment in these products/systems less valuable, and hence would undermine its competitive position. Information about customers is often confidential, in that it is provided under the terms of a legal agreement or counterparty relationship.

General Disclosure Principle

Banks should have a formal disclosure policy approved by the Board of Directors that addresses the banks' approach for determining what disclosures they will make, the internal controls over the disclosure process and the process for assessing the appropriateness of disclosures including validation and frequency.

Presentation of the Disclosure Requirements

The disclosure requirements are presented either in the form of templates or of tables. Templates must be completed with quantitative data in accordance with the definitions provided. Tables generally relate to qualitative requirements, but quantitative information is also required in some instances. Banks may choose the format they prefer when presenting the information requested in tables. The Master Circular on Basel III Regulations issued by Reserve Bank of India has prescribed the following disclosure tables;

Name of the head of the banking group to which the framework applies

Name of the entity/ Country of incorporation	Whether the entity is included under accounting scope of consolida-tion (yes/no)	Explain the method of consolida-tion	Whether the entity is included under regulatory scope of consolida-tion 225 (yes/no)	Explain the method of consolida-tion	Explain the reasons for difference in the method of consoli-dation	Explain the reasons if consolidated under only one of the scopes of consolida-tion 226

Qualitative Disclosures:

- List of group entities considered for consolidation
- List of group entities not considered for consolidation both under the accounting and regulatory scope of consolidation

Quantitative Disclosures:

List of group entities considered for consolidation

Name of the entity/country of incorporation	Principal activity of the entity	Total balance sheet equity *(as stated in the accounting balance sheet of the legal entity)*	Total balance sheet assets *(as stated in the accounting balance sheet of the legal entity)*

The aggregate amount of capital deficiencies in all subsidiaries which are not included in the regulatory scope of consolidation i.e. that are deducted:

Name of the subsidiaries/ country of incorporation	Principal activity of the entity	Total balance sheet equity *(as stated in the accounting balance sheet of the legal entity)*	% of bank's holding in the total equity	Capital deficiencies

The aggregate amounts (e.g. current book value) of the bank's total interests in insurance entities, which are risk-weighted

Name of the subsidiaries/ country of incorporation	Principal activity of the entity	Total balance sheet equity *(as stated in the accounting balance sheet of the legal entity)*	% of bank's holding in the total equity/ proportion of voting power	Quantitative impact on regulatory country capital of using risk weighting method versus using the full deduction method

Any restrictions or impediments on transfer of funds or regulatory capital within the banking group:

Table DF-2: Capital Adequacy

Qualitative disclosures Asummary discussion of the bank's approach to assessing the adequacy of its capital to support current and future activities **Quantitative disclosures** (a) Capital requirements for credit risk: • Portfolios subject to standardised approach • Securitisation exposures (b) Capital requirements for market risk: • Standardised duration approach; - Interest rate risk - Foreign exchange risk (including gold) - Equity risk (c) Capital requirements for operational risk: • Basic Indicator Approach • The Standardised Approach (if applicable) (d) Common Equity Tier 1, Tier 1 and Total Capital ratios: • For the top consolidated group; and • For significant bank subsidiaries (stand alone or sub-consolidated depending on how the Framework is applied)

Table DF-3: Credit Risk: General Disclosures for all Banks

Qualitative Disclosures

The general qualitative disclosure requirement with respect to credit risk, including:

- Definitions of past due and impaired (for accounting purposes);
- Discussion of the bank's credit risk management policy.

Quantitative Disclosures

(a) Total gross credit risk exposures[228], Fund based and Non-fund based separately.

(b) Geographic distribution of exposures[229], Fund based and Non-fund based separately

- Overseas
- Domestic

(c) Industry[230] type distribution of exposures, fund based and non-fund based separately

(d) Residual contractual maturity breakdown of assets,[231]

(e) Amount of NPAs (Gross)

- Substandard
- Doubtful 1
- Doubtful 2
- Doubtful 3
- Loss

(f) Net NPAs

(g) NPA Ratios

- Gross NPAs to gross advances
- Net NPAs to net advances

(h) Movement of NPAs (Gross)

- Opening balance
- Additions
- Reductions
- Closing balance

(i) Movement of provisions (Separate disclosure shall be made for specific provisions and general provisions held by the bank with a description of each type of provisions held)

- Opening balance
- Provisions made during the period
- Write-off
- Write-back of excess provisions
- Any other adjustments, including transfers between provisions
- Closing balance

In addition, write-offs and recoveries that have been booked directly to the income statement should be disclosed separately.

(j) Amount of Non-Performing Investments

(k) Amount of provisions held for non-performing investments

(l) Movement of provisions for depreciation on investments
- Opening balance
- Provisions made during the period
- Write-off
- Write-back of excess provisions
- Closing balance

(m) By major industry or counterparty type:
- Amount of NPAs and if available, past due loans, provided separately;
- Specific and general provisions; and
- Specific provisions and write-offs during the current period.

In addition, banks are encouraged also to provide an analysis of the ageing of past-due loans.

(n) Amount of NPAs and, if available, past due loans provided separately broken down by significant geographic areas including, if practical, the amounts of specific and general provisions related to each geographical area. The portion of general provisions that is not allocated to a geographical area should be disclosed separately.

Table DF-4: Credit Risk: Disclosures for Portfolios – Subject to the Standardised Approach

Qualitative Disclosures

For portfolios under the standardised approach:

- Names of credit rating agencies used, plus reasons for any changes;
- Types of exposure for which each agency is used; and
- Adescription of the process used to transfer public issue ratings onto comparable assets in the banking book.

Quantitative Disclosures

For exposure[232] amounts after risk mitigation subject to the standardised approach, amount of a bank's outstandings (rated and unrated) in the following three major risk buckets as well as those that are deducted;

- Below 100 % risk weight
- 100 % risk weight
- More than 100 % risk weight
- Deducted

Table DF-5: Credit Risk Mitigation: Disclosures for Standardised approaches

Qualitative Disclosures

The general qualitative disclosure requirement with respect to credit risk mitigation including: ***a) Policiesand processes for, and an indication of the extent to which the bank makes use of, on- and off-balance sheet netting;***

- policies and processes for collateral valuation and management;
- a description of the main types of collateral taken by the bank;
- the main types of guarantor counterparty and their credit worthiness; and
- information about (market or credit) risk concentrations within the mitigation taken

Quantitative Disclosures

(a) For each separately disclosed credit risk portfolio the total exposure (after, where applicable, on- or off-balance sheet netting) that is covered by eligible financial collateral after the application of haircuts.

(b) For each separately disclosed portfolio the total exposure (after, where applicable, on- or off-balancesheet netting) that is covered by guarantees/credit derivatives (whenever specifically permitted by RBI)

Table DF-6: Securitisation Exposures: Disclosure for Standardised Approach

Qualitative Disclosures

(a) The general qualitative disclosure requirement with respect to securitisation including a discussion of:

- the bank's objectives in relation to securitisation activity, including the extent to which these activities transfer credit risk of the underlying securitised exposures away from the bank to other entities.
- the nature of other risks (e.g. liquidity risk) inherent in securitised assets.
- the various roles played by the bank in the securitisation process (For example: origin tor, investor, servicer, provider of credit enhancement, liquidity provider, swap provider@, protection provider#) and an indication of the extent of the bank's involvement in each of them.
- a description of the processes in place to monitor changes in the credit and market risk of securitisation exposures (for example, how the behaviour of the underlying assets impacts securitisation exposures as defined in paragraph 5.16.1 of Basel III Capital Regulations).
- a description of the bank's policy governing the use of credit risk mitigation to mitigate the risks retained through securitisation exposures;
- A bank may have provided support to a securitisation structure in the form of an interest rate swap or currency swap to mitigate the interest rate/currency risk of the underlying assets, if permitted as per regulatory rules.
- A bank may provide credit protection to a securitisation transaction through guarantees, credit derivatives or any other similar product, if permitted as per regulatory rules.

(b) Summary of the bank's accounting policies for securitisation activities, including:

- whether the transactions are treated as sales or financings;
- methods and key assumptions (including inputs) applied in valuing positions retained or purchased
- changes in methods and key assumptions from the previous period and impact of the changes;
- policies for recognising liabilities on the balance sheet for arrangements that could require the bank to provide financial support for securitised assets.

(c) In the banking book, the names of ECAIs used for securitisations and the types of securitisation exposure for which each agency is used.

Quantitative Disclosures: Banking Book

(a) The total amount of exposures securitised by the bank.
(b) For exposures securitised losses recognised by the bank during the current period broken by the exposure type (e.g. Credit cards, housing loans, auto loans etc. detailed by underlying security).
(c) Amount of assets intended to be securitised within a year.
(d) Of (f), amount of assets originated within a year before securitisation.
(e) The total amount of exposures securitised (by exposure type) and unrecognised gain or losses on sale by exposure type.
(f) Aggregate amount of:
- on-balance sheet securitisation exposures retained or purchased broken down by exposure type and
- off-balance sheet securitisation exposures broken down by exposure type

(g) (i) Aggregate amount of securitisation exposures retained or purchased and the associated capital charges, broken down between exposures and further broken down into different risk weight bands for each regulatory capital approach
(ii) Exposures that have been deducted entirely from Tier 1 capital, credit enhancing I/Os deducted from total capital, and other exposures deducted from total capital (by exposure type).

Quantitative Disclosures: Trading Book

(a) Aggregate amount of exposures securitised by the bank for which the bank has retained some exposures and which is subject to the market risk approach, by exposure type.
(b) Aggregate amount of:
- on-balance sheet securitisation exposures retained or purchased broken down by exposure type; and
- off-balance sheet securitisation exposures broken down by exposure type.

(c) Aggregate amount of securitisation exposures retained or purchased separately for:
- securitisation exposures retained or purchased subject to Comprehensive Risk Measure for specific risk; and
- securitisation exposures subject to the securitisation framework for specific risk broken down into different risk weight bands.

Table DF-7: Market risk in trading Book

Qualitative disclosures

The general qualitative disclosure requirement for market risk including the portfolios covered by the standardised approach.

Quantitative disclosures

The capital requirements for:

- interest rate risk;
- equity position risk; and
- foreign exchange risk.

Table DF-8: Operational risk

Qualitative disclosures

In addition to the general qualitative disclosure requirement, the approach(es) for operational risk capital assessment for which the bank qualifies.

Table DF-9: Interest Rate Risk in the Banking Book (IRRBB)

Qualitative Disclosures

The general qualitative disclosure requirement including the nature of IRRBB and key assumptions, including assumptions regarding loan prepayments and behaviour of non-maturity deposits, and frequency of IRRBB measurement.

Quantitative Disclosures

The increase (decline) in earnings and economic value (or relevant measure used by management) for upward and downward rate shocks according to management's method for measuring IRRBB, broken downby currency (where the turnover is more than 5% of the total turnover).

Table DF-10: General Disclosure for exposures related to counter party credit risk.

Qualitative Disclosures

The general qualitative disclosure requirement with respect to derivatives and CCR, including:

- Discussion of methodology used to assign economic capital and credit limits for counterparty credit exposures;
- Discussion of policies for securing collateral and establishing credit reserves;
- Discussion of policies with respect to wrong-way risk exposures;
- Discussion of the impact of the amount of collateral the bank would have to provide given a credit rating downgrade.

Quantitative Disclosures

(a) Gross positive fair value of contracts, netting benefits[234], netted current credit exposure, collateral held (including type, e.g. cash, government securities, etc.), and net derivatives credit exposure[235]. Also report measures for exposure at default, or exposure amount, under CEM. The notional value of credit derivative hedges, and the distribution of current credit exposure by types of credit exposure[236].

(b) Credit derivative transactions that create exposures to CCR (notional value), segregated between use for the institution's own credit portfolio, as well as in its intermediation activities, including the distribution of the credit derivatives products used[237], broken down further by protection bought and sold within each product group

The Master Circular issued by Reserve Bank of India also contains other details required to be disclosed by the Banks. It may be noted that beyond disclosure requirements as set forth in these guidelines, banks are responsible for conveying their actual risk profile to market participants. The information banks disclose must be adequate to fulfil this objective. In addition to the specific disclosure requirements as set out in the guidelines, banks operating in India should also make additional disclosures in the following areas:

- Securitisation exposures in the trading book;
- Sponsorship of off-balance sheet vehicles;
- Valuation with regard to securitisation exposures; and
- Pipeline and warehousing risks with regard to securitisation exposures.

CAIIB Paper 2 (BFM) Module D Unit 3: Asset Classification and Provisioning Norms

Asset Classification

In August 1991, a high-level committee, **headed by M. Narasimham was appointed to examine various aspects of financial system.** One of the important recommendations of the Narasimham Committee was that balance sheets of the banks should be transparent and comply with international accounting standards.

The Committee recommended that banks should adopt uniform accounting practices in regard to income recognition and bad debts provisioning. In particular, income recognition of non-performing assets should not be on accrual basis but on record of recovery. The Committee also suggested that provisioning should depend upon a proper classification of assets, which in turn should be based on objective criteria.

Non-performing Assets

An asset, including a leased asset, becomes non-performing when it ceases to generate income for the bank. **A non-performing asset (NPA) is a loan or an advance where**:

- Interest and/ or installment of principal remain overdue for a period of more than 90 days in respect of a term loan.
- The account remains 'out of order' in respect of an Overdraft/Cash Credit (OD/CC).
- The bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted.

- The Installment of principal or interest thereon remains overdue for two crop seasons for short duration crops.
- The installment of principal or interest thereon remains overdue for one crop season for long duration crops.
- The amount of liquidity facility remains outstanding for more than 90 days, in respect of a securitisation transaction undertaken in terms of guidelines on securitisation dated February 1, 2006.
- In respect of derivative transactions, if the overdue receivables representing positive mark-to market value of a derivative contract, remain unpaid for a period of 90 days from the specified due date for payment.

Banks should classify an account as NPA only if the interest charged during any quarter is not serviced fully within 90 days from the end of the quarter. The classification of an asset as NPA should be based on the record of recovery.

- **'Out of Order' Status:** An account should be treated as 'out of order' if the outstanding balance remains continuously in excess of the sanctioned limit/drawing power. In cases where the outstanding balance in the principal operating account is less than the sanctioned limit/drawing power, but there are no credits continuously for 90 days as on the date of Balance Sheet or credits are not enough to cover the interest debited during the same period, these accounts should be treated as 'out of order'.
- **'Overdue':** Any amount due to the bank under any credit facility is 'overdue' if it is not paid on the due date fixed by the bank.

Income Recognition

- **The policy of income recognition has to be objective and based on the record of recovery.** Internationally, income from non-performing assets (NPA) is not recognised on accrual basis, but is booked as income only when it is actually received. Therefore, the banks should not charge and take to income account interest on any NPA
- However, interest on advances against term deposits, NSCs, IVPs, KVPs and life policies may be taken to income account on the due date, provided adequate margin is available in the accounts.

Reversal of income

- **If any advance, including bills purchased and discounted, becomes NPA as at the close of any year, interest accrued and credited to income account in the corresponding previous year,** should be reversed or provided for, if the same is not realised. This will apply to government guaranteed accounts too.
- In respect of NPAs, fees, commission and similar income that have accrued should cease to accrue in the current period and should be reversed or provided for with respect to past periods too, if uncollected.

Leased Assets

The finance charge component of finance income (as defined in 'AS 19 Leases' issued by the Council of the Institute of Chartered Accountants of India (ICAI)] on the leased asset which has accrued and was credited to income account before the asset became non-performing, and remaining unrealised, should be reversed or provided for in the current accounting period.

Appropriation of recovery in NPAs

Interest realised on NPAs may be taken to income account provided the credits in the accounts towards interest are not out of fresh/additional credit facilities sanctioned to the borrower concerned.

In the absence of a clear agreement between the bank and the borrower for the purpose of appropriation of recoveries in NPAs (i.e., towards principal or interest due), banks should adopt an accounting principle and exercise the right of appropriation of recoveries in a uniform and consistent manner.

Asset Classification

Categories of NPAS

Banks are required to classify non-performing assets further into the following **three categories, based on the period for which the asset has remained non-performing and the realisability of the dues:**

- Substandard Assets
- Doubtful Assets
- Loss Assets

(a) Substandard Assets: With effect from 31 March 2005, a substandard asset would be one, which has remained NPA period less than or equal to 12 months. In such cases, the current net worth of the borrower/guarantor.

(b) Doubtful Assets: With effect from March 31, 2005, an asset would be classified as doubtful if it has remained in the substandard category for a period of 12 months. A loan classified as doubtful has all the weaknesses inherent in assets that were classified as substandard, with the added characteristic that the weaknesses make collection or liquidation in full - on the basis of currently known facts, conditions and values - highly questionable and improbable (doubtful).

(c) Loss Assets: A loss asset is one where loss has been identified by the bank or internal or external auditors or the RBI inspection but the amount has not been written off wholly. In other words, such an asset is considered uncollectible and of such little value that its continuance as a bankable asset is not warranted, although there may be some salvage or recovery value.

Accounts with Temporary Deficiencies

The classification of an asset as NPA should be based on the record of recovery. A Bank should not classify an advance account as NPA merely due to the existence of some deficiencies, which are temporary in nature, such as non-availability of adequate drawing power, based on the latest available stock statement, balance outstanding exceeding the limit temporarily, non-submission of stock statements and non-renewal of the limits on the due date, etc.

Upgradation of Loan Accounts Classified as NPAs: If arrears of interest and principal are paid by the borrower in the case of loan accounts classified as NPAs, the account should no longer be treated as non-performing and may be classified as standard' accounts.

Accounts Regularised near about the Balance Sheet Date: The asset classification of borrowal accounts where a solitary or a few credits are recorded before the balance sheet date should be handled with care and without scope for subjectivity. Where the account indicates inherent weakness on the basis of the data available, the account should be deemed as an NPA. In other genuine cases, the banks must furnish satisfactory

evidence to the Statutory Auditors/Inspecting Officers about the manner of regularisation of the account to eliminate doubts on their performing status.

Asset Classification to be Borrower-wise and not Facility-wise

- It is difficult to envisage a situation when only one facility to a borrower/one investment in any of the securities issued by the borrower becomes a problem credit/investment and not others. Therefore, all the facilities granted by a bank to a borrower and investment in all the securities issued by the borrower will have to be treated as NPA/NPI and not the particular facility/ investment or part thereof which has become irregular.
- If the debits arising out of devolvement of letters of credit or invoked guarantees are parked in a separate account, the balance outstanding in that account also should be treated as a part of the borrower's principal operating account for the purpose of application of prudential norms on income recognition, asset classification and provisioning.
- The bills discounted under LC favouring a borrower may not be classified as a Non-performing assets (NPA), when any other facility granted to the borrower is classified as NPA. However, in case documents under LC are not accepted on presentation or the payment under the LC is not made on the due date by the LC issuing bank for any reason and the borrower does not immediately make good the amount disbursed as a result of discounting of concerned bills, the outstanding bills discounted will immediately be classified as NPA with effect from the date when the other facilities had been classified as NPA.

Loans with Moratorium for Payment of Interest

- **In the case of bank finance given for industrial projects or for agricultural plantations**, etc. where moratorium period is available for payment of interest, payment of interest becomes 'due' only after the moratorium or gestation period is over. Therefore, such amounts of interest do not become overdue and hence do not become NPA, with reference to the date of debit of interest. They become overdue after the due date for payment of interest, if the interest remains uncollected.

- **In the case of housing loan or similar advances granted to staff members where interest is payable, after recovery of principal, interest need not be considered as overdue from the first quarter onwards**. Such loans/advances should be classified as NPA only when there is a default in repayment of instalment of principal or payment of interest on the respective due dates.

Agricultural advances

- A loan granted for short duration crops will be treated as NPA, if the instalment of principal or interest thereon remains overdue for two crop seasons. A loan granted for long duration crops will be treated as NPA, if the instalment of principal or interest thereon remains overdue for one crop season.

Government guaranteed advances

- The credit facilities backed by guarantee of the Central Government though overdue may be treated as NPA only when the Government repudiates its guarantee when invoked. This exemption from classification of Government guaranteed advances as NPA is not for the purpose of recognition of income.

Project Loans

Project Loan means any term loan which has been extended for the purpose of setting up of an economic venture. There are occasions when the completion of projects is delayed for legal and other extraneous reasons like delays in Government approvals etc. All these factors, which are beyond the control of the promoters, may lead to delay in project implementation and involve restructuring/reschedulement of loans by banks. Accordingly, the following asset classification norms would apply to the project loans before commencement of commercial operations.

For this purpose, all project loans have been divided into the following two categories:

- Project Loans for infrastructure sector
- Project Loans for non-infrastructure sector

Takeout Finance

- **Takeout finance is the product emerging in the context of the funding of long-term infrastructure projects**. Under this arrangement, the institution/the bank financing infrastructure projects will have an arrangement with any financial institution for transferring to the latter the outstanding in respect of such financing in their books on a predetermined basis.
- In view of the time-lag involved in taking-over, the possibility of a default in the meantime cannot be ruled out.

Post-shipment Supplier's Credit

- In respect of post-shipment credit extended by the banks covering export of goods to countries for which the Export Credit Guarantee Corporation's (ECGC) cover is available, EXIM Bank has introduced a guarantee-cum-refinance programme whereby, in the event of default, EXIM Bank will pay the guaranteed amount to the bank within a period of 30 days from the day the bank invokes the guarantee after the exporter has filed claim with ECGC.
- Accordingly, to the extent payment has been received from the EXIM Bank, the advance may not be treated as a non performing asset for asset classification and provisioning purposes.

Export Project Finance

- **In respect of export project finance, there could be instances where the actual importer has paid the dues to the bank abroad but the bank in turn is unable to remit the amount due to political developments such as war, strife, UN embargo, etc.**
- In such cases, where the lending bank is able to establish through documentary evidence that the importer has cleared the dues in full by depositing the amount in the bank abroad before it turned into NPA in the books of the bank, but the importer's country is not allowing the funds to be remitted due to political or other reasons, the asset classification may be made after a period of one year from the date the amount was deposited by the importer in the bank abroad.

Provisioning Norms

A non-performing asset (NPA) causes two-fold impact on the profitability of a bank. On one hand, the bank ceases to earn interest on this asset and thus is deprived of its legitimate income from the asset. On the other hand, the bank is required to make provisions for this asset, depending on the classification category of the asset and value of security, if any. This makes a further dent in the profitability of the bank. The Reserve Bank of India introduced the system of asset classification and provisioning in line with international practices for the first time in 1993. The norms have undergone several changes during the last 24 years.

Loss Assets

Loss assets should be written off. If loss assets are permitted to remain in the books for any reason, 100% of the outstanding should be provided for.

Doubtful Assets

- 100% of the extent to which the advance is not covered by the realisable value of the security to which the bank has a valid recourse and the realisable value is estimated on a realistic basis.
- In regard to the secured portion, provision may be made on the following basis, at the rates ranging from 25% to 100% of the secured portion depending upon the period for which the asset has remained doubtful:

Period for which the advance has remained in 'doubtful" category	**Provision Requirement**
Up to one year	25%
One to three years	40%
More than three years	100%

Substandard Assets

- **A general provision of 15% on total outstanding should be made without making any allowance for ECGC guarantee cover and securities available.** The 'unsecured exposures' which are identified as substandard would attract

additional provision of 10%, i.e., a total of 25% on the outstanding balance. The provisioning requirement for unsecured doubtful' assets is 100%.

Standard Assets

Banks are required to make general provision for standard assets at the following rates for the funded outstanding on global loan portfolio basis:

- Farm Credit to agricultural activities and Small and Micro Enterprises (SMEs) sectors at 0.25 per cent.
- Advances to Commercial Real Estate (CRE) Sector at 1.00 per cent.
- Advances to Commercial Real Estate - Residential Housing Sector (CRE - RH) at 0.75 per cent.
- Housing loans extended at teaser rates at 2 per cent in view of the higher risk associated with them. The provisioning rate shall be reduced to 0.40 per cent after 1 year date on which the rates are reset at higher rates if the accounts remain 'standard'.
- All other loans and advances not included in (a) (b) and (c) above at 0.40 per cent.

Provisioning Coverage Ratio

- Provisioning Coverage Ratio (PCR) is essentially the ratio of provisioning to gross non-performing assets and indicates the extent of funds a bank has kept aside to cover loan losses.
- From a macro-prudential perspective, bank should build up provisioning and capital buffers in good times i.e. when the profits are good, which can be used for absorbing losses in a downturn. This will enhance the soundness of individual banks, as also the stability of the financial sector. It was, therefore, decided that banks should augment their provisioning cushions consisting of specific provisions against NPAs as well as floating provisions, and ensure that their total provisioning coverage ratio, including floating provisions, is not less than 70 per cent. Accordingly, banks were advised to achieve this norm by the end of September, 2010.
- Majority of the banks had achieved PCR of 70 percent and had represented to RBI whether the prescribed PCR is required to be maintained on an ongoing

basis. The matter was examined and till such time RBI introduces a more comprehensive methodology of countercyclical provisioning taking into account the international standards as are being currently developed by Basel Committee on Banking Supervision (BCBS) and other provisioning norms.

RBI's Strategic Debt Restructuring (SDR)

RBI has given powers and a tool to the Banks vide its Circular of June 2015 to try and clean up their balance sheets through SDR. SDR allows banks to convert their debt or loans into equity holding in a defaulting company, change management if needed and also find a suitable buyer for the company or its assets so that the Bank can recover its dues. As per the reports published in newspapers, Banks have already used the SDR effectively and converted debt into equity in several cases.

Central Repository of Information on Large Credits (CRILC)

RBI has set up a Central Repository of Information on Large Credits (CRILC) to collect, store, and disseminate credit data to lenders. Accordingly, RBI's Department of Banking Supervision (DBS) has advised vide circular of February 13, 2014 on **'Central Repository of Information on Large Credits (CRILC) - Revision in Reporting'** that banks will be required to report credit information, including classification of an account as SMA to CRILC on all their borrowers having aggregate fund-based and non-fund based exposure of Rs.50 million and above with them (Rs. 5 crores). However, Crop loans are exempted from such reporting, but, banks should continue to report their other agriculture loans in terms of the above instruction. Banks need not report their interbank exposures to CRILC including exposures to NABARD, SIDBI, EXIM Bank and NHB.

As per RBI norms, before a loan account turns into a NPA, banks are required to identify incipient stress in the account by creating **stress sub-categories under the Special Mention Account category as given below:**

SMA Sub-Categories	Basis for classification

SMA-0	Principal or interest payment not overdue for more than 30 days but account showing signs of incipient stress)
SMA-1	Principal or interest payment overdue between 31 -60 days
SMA-2	Principal or interest payment overdue between 61-90 days

In cases where banks fail to report SMA (Special Mention Accounts) status of the accounts to CRILC or resort to methods with the intent to conceal the actual status of the accounts or evergreen the account, banks will be subjected to accelerated provisioning for these accounts and/or other supervisory actions as deemed appropriate by RBI. The current provisioning requirement and the revised accelerated provisioning in respect of such non performing accounts are as under:

Asset Classification	Period as NPA	Current Provisioning (%)	Revised accelerated Provisioning (%)
Sub-standard (secured)	Upto 6 months 6 months to 1 year	15 15	No Change 25
Sub-standard (unsecured abiinitio)	Upto 6 months	25 (other than infrastructure loans) 20 (Infrastructure loans)	25

	6 months to One year	25 (other than infrastructure loans) 20 (Infrastructure loans)	40
Doubtful I	2nd year	25 (secured portion) 100 (unsecured portion)	40 (secure portion) 100 (unsecured portion)
Doubtful II	3rd & 4th year	40 (secured portion) 100 (unsecured portion)	100 (for both secured and unsecured portion)
Doubtful III	5th year onwards	100	100

Scheme for Sustainable Structuring of Stressed Assets (shortly knows as S4A):

- **S4A is the process of restructuring large ticket loans where the project is up and running. Here the lenders are required to separate a sustainable loan from an unsustainable loan.** The bank would convert the unsustainable debt into equity or equity related instruments.
- As a results, on one hand, the debt burden of the borrower is substantially reduced and on the other hand promoter's equity stake is also reduced. The idea behind the scheme is that banks would get the upside if the company regains its

old good form and it also gives the borrower a second chance to revive the company.

Insolvency and Bankruptcy Code, 2016 (IBC):

Government of India has enacted the IBC, which is the most comprehensive law and in the process has consolidated the existing laws and rules through a single legislature to help the banks to enforce insolvency and bankruptcy proceedings of distressed companies. The code includes the best practices following from around the world including USA and UK with regard to insolvency and bankruptcy.

This Code now would permit banks to push for recovery of money from a company within a period of 180 days, with a grace period of a further 90 days, if majority (i.e. 75%) of the creditors agrees. In a situation where the company does not meet the recovery terms, it will be liquidated involuntarily. **This will make it easier for banks and other financial institutions to deal with bad debts arising out of failed ventures.**

Some of the Key highlights of the Code are given below:

- The Code proposes to cover Insolvency of individuals, unlimited liability partnerships, Limited Liability partnerships (LLPs) and companies. The adjudicating authority for individuals and firms is the present DRTs and for corporates it would be National Company Law Tribunal (NCLT).
- Bankrupt individuals would be barred from contesting elections.
- Under the new law, a debtor could be jailed for up to five years for concealing property or defrauding creditors.
- It will strengthen hands of lenders to recover outstanding debts by setting a deadline of 180 days for companies to pay or face liquidation.
- To create Insolvency Professionals who will specialize in such cases, assist creditors, manage liquidation process. These professionals will in turn be certified by a newly created Insolvency Professional Agency.
- It will also create good date base and from this dissemination of information is possible related to the debtors.

- The entire operation of insolvency and bankruptcy through these various newly created agencies will be overseen by a regulator - Insolvency and Bankruptcy Board of India.
- Workers' salaries for up to 24 months will get first priority in case of liquidation of assets of a company, ahead of secured creditors.
- Money due to employees from PPF, gratuity fund will not be included in the estate of the bankrupt company or individual.

CAIIB BFM Module D Unit 4: Liquidity Management

Objectives of Liquidity Management

The objectives of asset liability management are two-fold: ensuring profitability and ensuring liquidity. Liquidity, which is represented by the quality and marketability of assets and liabilities, exposes the organisation to liquidity risk. Unlike other risks like interest rate risk, market risk, operational and technology risks and foreign exchange risks that can threaten the very solvency of the bank, liquidity risk is a normal aspect of everyday management of a financial institution. Only in extreme cases, liquidity risk problems translate into solvency risk problems.

Definition

- **Banks need liquidity to meet deposit withdrawals and to fund loan demands. The variability of loan demand and the variability of deposits determine a bank's liquidity needs.**
- Liquidity represents the ability to accommodate the decreases in liability and to fund the increases in assets. A bank has adequate liquidity when it can obtain sufficient funds either by increasing liabilities or by converting assets, promptly and at a reasonable cost. Liability is essential in all banks to compensate for the expected and the unexpected balance sheet fluctuations and to provide funds for growth.

Dimensions and Role Of Liquidity Risk Management

A Bank's liquidity management is the process of generating funds to meet its contractual or relationship obligations at reasonable prices at all times. New loan

demand, existing loan commitments, and deposit withdrawals are the basic contractual or relationship obligations that a bank must meet. ***Effective liquidity management by a bank serves the following important purposes:***

- It demonstrates the market place that the bank is safe and therefore capable of repaying its borrowings
- It enables bank to meet its prior loan commitments, whether formal or informal.
- It enables the bank to avoid unprofitable sale of assets. This function permits the bank to avoid sale of assets at fire sale prices, as opposed to going concern values to generate funds.
- It lowers the size of the default risk premium the bank must pay for funds. This function focuses on the reasonable price aspects of the definition of liquidity management. Bank's with strong balance sheets will be perceived by the market place as being liquid and safe. Such banks will be able to buy funds at risk premium as compared to the market's perceived creditworthiness.

Adequacy of a bank's liquidity position depends upon an analysis of the following factors:

- Historical funding requirements
- Current liquidity position
- Anticipated future funding needs
- Sources of funds
- Options for reducing funding needs
- Present and anticipated asset quality
- Present and future earnings capacity
- Present and planned capital position

As all banks are affected by changes in the economic climate, the monitoring of economic and money market trends is the key to liquidity planning. A sound financial management can minimise the negative effects of these trends while accentuating the positive ones.

The factors that may affect a bank's liquidity include:

- A decline in earnings

- An increase in non-performing assets
- Deposit concentrations
- Downgrading by rating agencies
- Expanded business opportunities
- Acquisitions
- New tax initiatives

To provide funds to satisfy its funding needs, a bank must perform one or a combination of the following:

- Dispose of liquid assets
- Increase short-term borrowings
- Decrease holdings of less liquid assets
- Increase liabilities of a term nature
- Increase capital funds

Types of Liquidity Risks

Liquidity exposure can stem from both internally institution specific) and externally generated factors. External liquidity risks can be geographic, systemic or instrument-specific. Internal liquidity risk relates largely to perceptions of an institution in its various markets: local, regional, national or international. Other categories of liquidity risk are:

- **Funding Risk**: Need to replace net outflows due to unanticipated withdrawal (pre-mature closure of deposits)/non-renewal of deposits (wholesale and retail), arises due to:
  - Fraud causing substantial loss
  - Systemic risk
  - Loss of confidence
  - Liabilities in foreign currencies
- **Time Risk:** Need to compensate for non-receipt of expected inflows of funds, arises due to:
  - Severe deterioration in the asset quality

- Standard assets turning into non-performing assets and/or borrowers' defaulting to repay as per the terms of repayment
- Temporary problems in recovery
- Time involved in managing liquidity

➢ **Call Risk:** Crystallisation of contingent liabilities and inability to undertake profitable business opportunities when desirable, arises due to:

- Conversion of non-fund based limit into fund-based
- Swaps and options

Measuring and Managing Liquidity Risk

Measuring and managing liquidity are among the most vital activities of commercial banks. By assuring a bank's ability to meet its liabilities as they become due, liquidity management can reduce the probability of an irreversible adverse situation developing. Even in cases where crisis develops because of a problem elsewhere at a bank, such as a severe deterioration in asset quality or the uncovering of fraud, or where a crisis reflects a generalised loss of confidence in financial institutions, the time available to a bank to address the problem will be determined by its liquidity. Indeed the importance of liquidity transcends the individual institution, since a liquidity shortfall at a single institution can have system-wide repercussions. For this reason, the analysis of liquidity requires bank managements to measure not only the liquidity positions of banks on an ongoing basis but also to examine how funding requirements are likely to evolve under crisis scenarios.

In particular, good management information systems, central liquidity control, analysis of net funding requirements under alternative scenarios, diversification of funding sources, and contingency planning are crucial elements of strong liquidity management at a bank of any size or scope of operations.

The following steps are necessary for managing liquidity risk in banks:

- Developing a structure for managing liquidity risk
- Setting tolerance level and limit for liquidity risk
- Measuring and managing liquidity risk

Developing a Structure for Managing Liquidity Risk

Sound liquidity risk management involves setting a strategy for the bank ensuring effective board and senior management oversight as well as operating under a sound process for measuring, monitoring and controlling liquidity risk.

Virtually every financial transaction or commitment has implications for a bank's liquidity. Moreover, the transformation of illiquid assets into more liquid ones is a key activity of banks. Thus, a bank's liquidity policies and liquidity management approach should form the key elements of a bank's general business strategy. Understanding the context of liquidity management involves examining a bank's managerial approach to funding and liquidity operations and its liquidity planning under alternative scenarios.

- The liquidity strategy should set out the general approach the bank will have to adopt to improve the liquidity including various quantitative and qualitative targets.
- The strategy should also address the bank's goal of protecting financial strategy and the ability to withstand stressful events in the market place.
- It should enunciate specific policies on particular aspects of liquidity management like composition of assets and liabilities, maintenance of cumulative gaps over certain periods and the approach to managing liquidity in different currencies and from one country to another.
- The strategy of managing liquidity risk should be communicated throughout the organisation. All business units within the bank that conduct activities having an impact on liquidity should be fully aware of the liquidity strategy and should operate under the approved policies and procedures.
- The Board should monitor the performance and liquidity risk profile of the bank and periodically review information that is timely and sufficiently detailed to allow them to understand and assess the liquidity risk facing the bank's key portfolios and the bank as a whole.
- A Bank should have a liquidity management structure in place to execute effectively the liquidity strategy, policies and procedures. The responsibility of managing the overall liquidity of the bank should be placed with a specific identified group within the bank. This might be in the form of an Asset Liability Committee comprising of senior management, the treasury function or a risk management department.

Setting Tolerance Level and Limit for Liquidity Risk

Bank's management should set limits to ensure liquidity and these limits should be reviewed by supervisors. Alternatively, supervisors may set the limits. Limits could be set on the following:

- The cumulative cash flow mismatches (i.e., the cumulative net funding requirement as a percentage of total liabilities) over particular periods – next day, next week, next fortnight, next month, next year. These mismatches should be calculated by taking a conservative view of marketability of liquid assets, with a discount to cover price volatility and any drop in price in the event of a forced sale , and should include likely outflows as a result of draw-down of commitments, etc.
- Liquid assets as a percentage of short-term liabilities. The assets included in this category should be those which are highly liquid, i.e., only those assets which are judged to be having a ready market even in periods of stress.
- A limit on loan to deposit ratio.
- A limit on loan to capital ratio.
- A general limit on the relationship between anticipated funding needs and available sources for meeting those needs.
- Primary sources for meeting funding needs should be quantified.
- Flexible limits on the percentage reliance on a particular liability category, (e.g., certificates of deposits or high cost deposits should not account for more than a certain percentage of total liabilities).
- Limits on the dependence on individual customers or market segments for funds in liquidity position calculations.
- Flexible limits on the minimum/maximum average maturity of different categories of liabilities.
- Minimum liquidity provision to be maintained to sustain operations.

An example of setting tolerance level for a bank:

1.To manage the mismatch levels so as to avert wide liquidity gaps - The residual maturity profile of assets and liabilities will be such that mismatch level for time bucket of 1-14 days and 15–28 days remains around 80% of cash outfiows in each time bucket.

2.To manage liquidity and remain solvent by maintaining short-term cumulative gap up to one year (short-term liabilities - short-term assets) at 15% of total out flow of funds.

Measuring and Managing Liquidity Risk

Measuring and managing funding requirement can be done through two approaches.

- Stock approach
- Flow approach

Stock Approach (to Measuring and Managing Liquidity)

Stock approach is based on the level of assets and liabilities as well as off-balance sheet exposures on a particular date. The following ratios are calculated to assess the liquidity position of a bank.

- **Ratio of Core Deposit to Total Assets – Core Deposit/Total Assets:** The higher the ratio, the better it is because core deposits are treated to be a stable source of liquidity. Core deposit will constitute deposits from the public in the normal course of business.
- **Net Loans to Totals Deposits Ratio - Net Loans/Total Deposits:** It reflects the ratio of loans to public deposits or core deposits. Total loans in this ratio represent net advances after deduction of provision for loan losses and interest suspense account. Loan is treated to be a less liquid asset and therefore, the lower the ratio, the better it is.
- **Ratio of Time Deposits to Total Deposits – Time Deposits/Total Deposits:** Time deposits provide a stable level of liquidity and negligible volatility. Therefore, the higher the ratio, the better it is.
- **Ratio of Volatile Liabilities to Total Assets - Volatile Liabilities/Total Assets**: Volatile liabilities like market borrowings are to be assessed and compared with the total assets. Higher portion of volatile assets will cause higher problems of liquidity. Therefore, the lower the ratio, the better it is.
- **Ratio of Short-Term Liabilities to Liquid Assets:** Short-term liabilities are required to be redeemed at the earliest. Therefore, they will require ready liquid assets to meet the liability. It is expected to be lower in the interest of liquidity.

- **Ratio of Liquid Assets to Total Assets - Liquid Assets/Total Assets**: Higher level of liquid assets in total assets will ensure better liquidity. Therefore, the higher the ratio, the better it is. Liquid assets may include bank balances, money at call and short notice, inter-bank placements due within one month, securities held for trading and available for sale with a ready market.
- **Ratio of Short-Term Liabilities to Total Assets - Short-term Liabilities/Total Assets:** Short-term liabilities may include balances in current account, volatile portion of savings accounts leaving behind core portion of saving which is constantly maintained and deposits maturing within a short period of one month. A lower ratio is desirable.
- **Ratio of Prime Asset to Total Asset - Prime Asset/Total Assets:** Prime assets may include cash balances the bank and balances with banks including central bank which can be withdrawn at any time with without any notice. The more or higher the ratio, the better it is.
- **Ratio of Market Liabilities to Total Assets - Market Liabilities/Total Assets**: Market liabilities may include money market borrowings, inter-bank liabilities repayable within a short period. The lower ratio, the better it is.

(i) (Volatile liabilities - Temporary Assets) (Earning Assets - Temporary Assets)

(ii) Core deposits/Total Assets

(iii) (Loans + mandatory SLR + mandatory CRR + Fixed Assets)/Total Assets

(iv) (Loans + mandatory SLR + mandatory CRR + Fixed Assets)/Core Deposits

(v) Temporary Assets/Total Assets

(vi) Temporary Assets/Volatile Liabilities

(vii) Volatile Liabilities/Total Assets

Flow Approach (to Measuring and Managing Liquidity)

The framework for assessing and managing bank liquidity through flow approach has three major dimensions:

- Measuring and managing net funding requirements
- Managing market access

- Contingency planning

(a) Measuring and Managing Net Funding Requirements

The flow approach is the basic approach being followed by Indian banks for measuring and managing liquidity risk. It is also called the gap method of measuring and managing liquidity and requires the preparation of structural liquidity gap report. In this method, net funding requirement is calculated on the basis of residual maturities of assets and liabilities.

These aspects will be elaborated under the following heads:

- The Maturity Ladder
- Alternative Scenarios
- Measuring Liquidity Over the Chosen Time-frame
- Assumptions used in Determining Cash Flows

The Maturity Ladder: A maturity ladder should be used to compare a bank's future cash inflows to its future cash outflows over a series of specified time periods. Cash inflows arise from maturing assets, saleable non-maturing assets and established credit lines that can be tapped. Cash outflows include liabilities falling due and contingent liabilities, especially committed lines of credit that can be drawn down.

Alternative Scenarios: This involves evaluating whether a bank has sufficient liquidity and depends in a large measure on the behaviour of cash flows under different conditions. Analysing liquidity thus entails laying out 'what if' scenarios.

There may be three scenarios for a bank in connection with management of liquidity which provide useful benchmarks:

- General Market Conditions
- Bank-specific Crisis
- General Market Crisis

Measuring Liquidity Over the Chosen Timeframe: The evolution of a bank's liquidity profile under one or more scenarios can be tabulated or portrayed graphically, by cumulating the balance of expected cash inflows and cash outflows at several time points. A stylised liquidity graph can be constructed, enabling the evolution of the

cumulative net excess or deficit of funds to be compared under the three scenarios in order to provide further insights into a bank's liquidity and to check how consistent and realistic the assumptions are for the individual bank.

Assumptions used in Determining Cash Flows: Liquidity risk planning is done for the future scenarios and therefore it is not always possible to predict with certainty as to what will happen in future. It all depends upon certain assumptions which require to be reviewed frequently to determine their continuing validity for making predictions for liquidity risk management. The total number of major liquidity assumptions to be made, however, is fairly limited and fall under the categories of (a) assets, (b) liabilities, (c) off-balance-sheet activities, and (d) others.

(b)Managing Market Access

Some liquidity management techniques are viewed not only for their influence on the assumptions used in constructing maturity ladders, but also for their direct contribution to enhancing a bank's liquidity. Thus, it is important for a bank to review periodically its efforts to maintain the diversification of liabilities, to establish relationships with liability holders and to develop asset-sales markets.

As a check for adequate diversification of liabilities, a bank needs to examine the level of reliance on individual funding sources, by instrument type, nature of the provider of funds, and geographic market.

(c) Contingency Planning

A bank's ability to withstand a net funding requirement in a bank-specific or general market liquidity crisis can also depend on the calibre of its formal contingency plans. ***Effective contingency plans should address two major questions:***

- Does management have a strategy for handling a crisis?
- Does management have procedures in place for accessing cash in emergency?

The degree to which a bank has addressed these questions realistically, provides management with additional insight as to how a bank may fare in a crisis.

Strategy for Handling a Crisis: A game plan for dealing with a crisis should consist several components. Most important are those that involve managerial coordination. A

contingency plan needs to spell out procedures to ensure that information flows remain timely and uninterrupted, and that the information flows provide senior management with the precise information it needs in order to make quick decisions A clear division of responsibility must be set out so that all personnel understand what is expected of them during a crisis. Confusion in this area can waste resources on certain issues and omit coverage on others.

Backup Liquidity for Emergency Situations: Contingency plans should also include procedures for making up cash flow shortfalls in emergency situations. Banks have several sources of such funds available to them, including previously unused credit facilities and credit lines from the domestic central bank. Depending on the severity of a crisis, a bank may choose – or be forced to use one or more of these sources. The plan should spell out as clearly as possible the amount of funds a bank has available from these sources, and under what scenarios a bank could use them.

Reserve Bank of India Guidelines for Maturity Buckets Reserve Bank of India has given a framework for bucket-wise classification of assets and liabilities to be followed by Indian banks. These are the guiding factors for the banks. **All the assets and liabilities are classified into ten time buckets as given below:**

- Tomorrow
- 2-7 days
- 8-14 days
- 15–28 days
- 29 days and up to 3 months
- Over 3 months and up to 6 months
- Over 6 months and up to 1 year
- Over 1 year and up to 3 year
- Over 3 years and up to 5 years
- Over 5 years

CAIIB BFM Module D Unit 5: Interest Rate Risk Management

Essentials Of Interest Rate Risk

Interest rate risk rates is the exposure of a bank's financial condition to adverse movements in interest rates. Accepting this risk is a normal part of banking and can be an important source of profitability and shareholder value. However, excessive interest rate risk can pose a significant threat to a bank's earnings and capital base. Changes in interest rates affect a bank's earnings by changing its net interest income and the level of other interest sensitive income and operating expenses. Changes in interest rates also affect the underlying value of the bank's assets, liabilities, and off-balance-sheet (OBS) instruments because the present value of future cash flows (and in some cases, the cash flows themselves) change when interest rates change.

Interest rate risk refers to volatility in Net Interest Income (NII) or in variations in Net Interest Margin (NIM), i.e., NII divided by Earning Assets due to changes in interest rates. In other words, interest rate risk arises from holding assets and liabilities with different principal amounts, maturity dates or dates, i.e., 'rollover rates'.

Sources Of Interest Rate Risk

Gap or Mismatch Risk

A gap or mismatch risk arises from holding assets and liabilities with different principal amounts, maturity dates or repricing dates, thereby creating exposure to changes in the level of interest rate. The gap is the difference between the amount of assets and liabilities on which the interest rates are reset during a given period. In other words, when assets and liabilities fall due to repricing in different periods, they can create a mismatch. Such a mismatch or gap may lead to gain or loss depending upon how interest rates in the market tend to move.

Example 1

- A bank holds Rs. 100 crore liabilities at 9% of one year maturity to fund assets of Rs. 100 crore at 10% with two year maturity. Over the first year, bank is getting a profit spread of 1% amounting to Rs. 1 crore. However, its profits for second year are not certain. If interest rate remains unchanged, the profits will continue to be the same. However, since the liabilities are for one year and need to be rolled over for second year, bank is exposed to interest rate risk.

- If the interest rate on liabilities increase to 11% in second year, bank would be incurring a loss of 1%, i.e., Rs. 1 crore in the second year. Conversely bank is again exposed to interest rate risk if it holds shorter term assets relative to liabilities, i.e., liabilities maturing in two years against assets maturing in one year. It then faces the uncertainty of interest rate at which it can reinvest funds after the first year for further one year matching the liabilities maturity.

Basis Risk

In a perfectly matched gap position, there is no timing difference between the repricing dates, i.e. the magnitude of change in the deposit rates would be exactly matched by the magnitude of change in the loan rate. However, interest rate of two different instruments will seldom change by the same degree during the same period of time. The risk that the interest rate of different assets and liabilities may change in different magnitudes is called basis risk. The under noted table shows how the basis risk occurs.

Gap Statement of XYZ Bank (Amt. In Crore of Rs.)			
Repricing Assets		**Repricing Liabilities**	
Call Money	50	Savings Deposit	50
Cash credit	40	Fixed Deposits	50
	90		100
Gap (-)	10		

The bank as of now has a negative gap of Rs. 10 crore. In case the interest rate falls by 1%, then as per the traditional gap management (assuming rates on all assets and liabilities change by 1%- parallel shift), the bank's NII should improve by Rs. 1 crore. Instead of falling in the same magnitude, assume that the rate on call money lending falls by 1%, the rate on cash credit falls by 0.7%, the rate on savings deposit falls by 0.5% and the rate on fixed deposits falls by 0.4%. The undernoted calculations indicate

that the bank's NII would deteriorate rather than improving in terms of the assumption of gap management.

	Fall in Rates	Fall in Amount
Call Money	50 x 1.0%	Rs. 0.50 crore
Cash Credit	40 x 0.7%	Rs. 0.28 crore
A. Decrease in interest income	(-)	Rs. 0.78 crore
Savings deposit	50 x 0.5%	Rs. 0.25 crore
Fixed deposit	50 x 0.4%	Rs. 0.20 crore
B. Decrease in interest expenses	(+)	Rs. 0.45 crore
Loss in Net Interest Income: A-B	(-)	Rs. 0.33 crore

Net Interest Position Risk

The bank's net interest position also exposes the bank to an additional interest rate risk. If a bank has more assets on which it earns interest than its liabilities on which it pays interest, interest rate risk arises when interest rate earned on assets changes while the cost of funding of the liabilities remains the same.

Thus, the bank with a positive net interest position will experience a reduction in NII as interest rate declines and an expansion in NII as interest rate rises.

A large positive net interest position accounts for most of the profit generated by many financial institutions.

Embedded Option Risk

Large changes in the level of market interest rates create another source of risk to banks profit by prepayment of loans and bonds (with put or call options) and/or premature withdrawal of deposits before their stated maturity dates. In cases where there is no penalty for prepayment of loans, the borrowers have a natural tendency to pay off their loans when a decline in interest rate occurs. In such cases, the bank will receive only a lower NII.

Example

Take the case of a bank which has disbursed a 90 days loan at the rate of 10% which is funded through a 90-day CD at the rate of 8%.

In case the rate of interest decline to 9% after 30 days and the borrower prepays his loan immediately and the bank receives only 200 basis points NII for 30 days rather than the anticipated 90 days. In the remaining 60 days of the 90 days term, the NII will be only 100 basis points, as the Bank would be reinvesting the funds at 9%.

The embedded option risk is becoming a reality in India and is experienced in volatile situations. The faster and higher the magnitude of changes in the interest rate, the greater will be embedded options the risk to the bank's NII.

Yield Curve Risk

An yield curve is a line on a graph plotting the yield of all maturities of a particular instrument. Yield curve changes its slope and shape from time to time depending upon repricing and various other factors. As the economy moves through the business cycle, the yield curve changes rather frequently. At the intervention of Reserve Bank of India, the yield curve can be twisted to the desired direction by altering the yields on government stocks or different maturities by RBI.

Example

- To illustrate how a change in the shape of yield curve affects the bank's NII, let us assume that XYZ Bank, used 3 years floating rate fixed deposits for funding 3 year floating rate loans (the deposits and loans are repriced at quarterly intervals). If the bank pays 100 basis point above the 12.50% (91 days Treasury Bills rate), i.e. 13.5% to fixed deposits and charges 300 basis point, above the 364 days Treasury Bills rate of 13%, i.e., 16% on its loans, a NII of 250 basis points is produced.
- If the yield curve turns inverted during the next repricing date with the 91 days TBs rate increasing to 14% and 364 days TBs rate remaining at 13% and the spread relationship or deposits and loans to TBs remains constant, the NII will be reduced to 100 basis points, i.e.,(16% -14% +1%= 1%).

Price Risk

Price risk occurs when assets are sold before their maturity dates. In the financial market, bond prices and bond yields are inversely related. For example, the price of 10-year 14% Government of India stock will receive only lower price than originally paid for, when coupon or stocks of similar maturity has gone up to 15% in the market. The price risk is closely associated with the trading book which is created for making profit out of short-term movements in interest rates,

Reinvestment Risk

Uncertainty with regard to interest rate at which the future cash flows can be reinvested is called reinvestment risk.

Example

- Suppose, XYZ Bank has a zero coupon deposit of Rs. 10,000 and it promises to double the amount with 7 years and uses the funds for investing in a 7-year bond at an annual coupon of 12%.
- In case, the interest rate falls to 10%% after one year, the bank could reinvest the coupon cash flows only at 10% against the anticipation of reinvesting the coupon at a fixed rate of 12%. Due to this reinvestment risk, the bank will find it difficult to pay the interest on deposit on maturity.

Effects Of Interest Rate Risk

As the discussion above suggests, changes in interest rates can have adverse effects both on a bank's earnings and its economic value. This has given rise to two separate, but complementary, perspectives for assessing a bank's interest rate risk exposure, i.e.,

- Earnings perspective
- Economic perspective
- Embedded losses

Earnings Perspective

- **In the earnings perspective, the focus of analysis is the impact of changes in interest rates on accrual or reported earnings**. This is the traditional approach to interest rate risk assessment taken by many banks.

- Variation in earnings is an important focal point for interest rate risk analysis because reduced earnings or outright losses can threaten the financial stability of an institution by undermining its capital adequacy and by reducing market confidence.

Economic Value Perspective

- **Variation in market interest rates can also affect the economic value of a bank's assets, liabilities and off-balance-sheet (OBS) positions**. Thus, the sensitivity of a bank's economic value to fluctuations in interest rates is a particularly important consideration of shareholders, management and supervisors alike.

Embedded Losses

- **The earnings and economic value perspectives discussed thus far focus on how future changes in interest rates may affect a bank's financial performance**.
- When evaluating the level of interest rate risk, it is willing and able to assume, a bank should also consider the impact that past interest rates may have on future performance.
- In particular, instruments that are not marked to market may already contain embedded gains or losses due to past rate movements. These gains or losses may be reflected over time in the bank's earnings.

Measurement Of Interest Rate Risk

Before risk can be managed, it must be identified and quantified. Unless the quantum of risk inherent in a bank's balance sheet is measured, it is impossible to measure the degree of risk to which the bank is exposed. It is also equally impossible to develop effective risk management strategies/techniques without being able to understand the correct risk position of the bank.

In general, but depending on the complexity and range of activities of the individual bank, banks should have interest rate risk measurement systems that capture all material sources of interest rate risk and that assess the effects of rate changes on both earnings and economic value. Measurement systems should:

- Assess all material interest rate risks associated with a bank's assets, liabilities, and OBS positions
- Utilise generally accepted financial concepts and risk measurement techniques
- Have well-documented assumptions and parameters

Interest Rate Risk Measurement Techniques

Banks use various techniques to measure the exposure of earnings and of economic value to changes in interest rates. The variety of techniques ranges from calculations that rely on simple maturity and repricing tables, to static simulations based on current on- and off-balance-sheet positions, to highly sophisticated dynamic modelling techniques that incorporate assumptions about the behaviour of the bank and its customers in response to changes in the interest rate environment.

- Repricing Schedules
- Gap Analysis
- Duration
- Simulation Approaches

Strategies For Controlling Interest Rate Risk

Interest rate risk management process should begin with strategies which change the bank's interest rate sensitivity by altering various components of the balance sheet. The actual management of banks' assets and liabilities focuses on controlling the gap between Rate Sensitive Assets and Rate Sensitive Liabilities. Some banks pursue a strategy of matching assets and liabilities maturities as closely as possible to reduce the gap to zero and insulate the NII from the volatility of interest rate. Aggressive bankers, however, vary the gap in tune with their interest rate forecasts. If they expect increase in interest rates, they widen the gap by repricing the assets more frequently than their liabilities.

The banks have been following various balance sheet strategies to limit the shocks of interest rate volatility. The basic strategy of the banks is focussed on bridging the gap position. The strategies for reducing the assets and liabilities sensitivity are:

Reduce Asset Sensitivity

- Extend investment portfolio maturities
- Increase floating rate deposits
- Increase fixed rate lending
- Sell floating rate loans
- Increase short-term borrowings
- Increase long-term lendings
- Reducing investment portfolio maturities
- Increase floating rate lendings
- Increase long-term deposits
- Increase short-term lendings

The other options with available to the banks for managing interest rate risks are:

- Match long-term assets preferably with non-interest bearing liabilities.
- Match repriceable assets with a similar repriceable liabilities.
- Use Forward Rate Agreements, Swaps, Options and Financial Futures to construct synthetic securities and thus hedge against any exposure to interest rate risk.
- Maturity mismatch is accentuated by proliferation of Performing Assets (NPAs) and loan renegotiations. Sound loaning policies and effective post-sanction monitoring and recovery steps can contain the volume of NPAs. Large volume of NPA in the balance sheet entails carrying of non-interest earning assets, funded out of volatile liabilities.

Controls and Supervision Of Interest Rate Risk Management

Banks are required to have adequate internal controls to ensure the integrity of their interest rate risk management process. These internal controls should be an integral part of the institution's overall system of internal control. They should promote effective and efficient operations, reliable financial and regulatory reporting, and compliance with relevant laws, regulations, and institutional policies. ***An effective system of internal control for interest rate risk includes:***

- A strong control environment
- An adequate process for identifying and evaluating risk

- The establishment of control activities such as policies, procedures, and methodologies
- Adequate information systems
- Continual review of adherence to established policies and procedures

Sound Interest Rate Risk Management Practices

Sound interest rate risk management involves the application of four basic elements in the management of assets, liabilities and OBS instruments:

- Appropriate board and senior management oversight
- Adequate risk management policies and procedures
- Appropriate risk measurement, monitoring, and control functions
- Comprehensive internal controls and independent audits

Board and Senior Management Oversight of Interest Rate Risk

- **Effective oversight by a bank's board of directors and senior management is critical to a sound interest rate risk management process.**
- It is essential that these individuals are aware of their responsibilities with regard to interest rate risk management and that they adequately perform their roles in overseeing and managing interest rate risk.

Board of Directors

- **In order to carry out its responsibilities, the board of directors in a bank should approve strategies and policies with respect to interest rate risk management and ensure that senior management takes the steps necessary to monitor and control these risks consistent with the approved strategies and policies.**
- The board of directors should be informed regularly of the interest rate risk exposure of the bank in order to assess the monitoring and controlling of such risk against the board's guidance on the levels of risk that are acceptable to the bank.

Senior Management

Senior management must ensure that the structure of the bank's business and the level of interest rate risk it assumes are effectively managed that appropriate policies and procedures are established to control and limit these risks, and that resources are available for evaluating and controlling interest rate risk.

Senior management is also responsible for maintaining:

- Appropriate limits on risk taking
- Adequate systems and standards for measuring risk
- Standards for valuing positions and measuring performance
- A comprehensive interest rate risk reporting and interest rate risk management
- Review process
- Effective internal controls

Lines of Responsibility and Authority for Managing Interest Rate Risk

- Banks should clearly define the individuals and/or committees responsible for managing interest rate risk and should ensure that there is adequate separation of duties in key elements of the risk management process to avoid potential conflicts of interest.

CAIIB BFM Module D Unit 6: RAROC and Profit Planning

Profit Planning

Profit planning in a bank essentially involves balance sheet management; covering credit, investment and non-fund based income. Banks' income arises from

three sources, viz. interest income, feebased income and treasury income. Interest income is derived from lending as well as investments in securities, bonds etc.

TABLE				
	I	**II**	**III**	**IV**
Investment in Govt. Securities with yield 6% and risk weight of 0%.	1000	400	300	300
Lending to AAA rated customers with yield 8% p.a & risk weigh of 20%	0	600	300	300
Lending to AA rated customers with Yield of 10% p.a. & risk weight of 50%.	0	0	400	200
Lending to A rated customers with yield of 12% p.a. and risk weight of 100%	0	0	0	200
Total Investment	1000	1000	1000	1000
YIELD				
TOTAL (Amount X Yield)	60	72	82	86
Yield %	6%	7.20%	8.20%	8.60%
Risk Weight Assets#	0	120	260	360
Capital Required (@8%)	0	9.60	20.8	28.8

Thus, you would observe that risk would increase for lending to lower rated customers resulting in an increased need for capital and also improved yield on the assets. Banks need to optimise the investment and lending portfolio to earn the best possible returns for a given capital level.

Banks have to take into account the effect of NPA on the interest income and thereby on the profitability. NPAs do not generate income and therefore bring down the yield on advances. Also, under Basel-II/III regime, the risk weightage of such assets is higher, thereby forcing a bank to maintain higher capital Thus, NPAs have a two-fold effect, reduction in income and need for additional capital. Hence, return on capital or profitability gets further deteriorated.

Thus, every effort to rationalise this segment of expenditure is made. In nutshell, profitability is a function of six variables:

- Interest income
- Fee-based income
- Trading income
- Interest expenses
- Staff expenses
- Other operating expenses

Maximisation of the first three variables and minimisation of the last three variables are the requisites to maximise profitability. All the six factors are dependent on each other and achieving the optimum level is the requirement here.

Economic Capital

- The expected loss is a measure of the reserves necessary to guard against future losses. The pricing of products should provide a buffer against expected losses and the unexpected loss is a measure of the **amount of economic capital required to support the banks financial risk. This capital is also called risk capital.**
- Some activities may require large amounts of risk capital, which in turn requires higher returns. This is the essence of risk adjusted return on capital (RAROC) measures. The central objective is to establish benchmarks to evaluate the economic return of business activities. This includes transactions, products, customer trades, and business lines, as well as the entire business.

Risk Capital

RAROC is a part of the family of the risk-adjusted performance measures (RAPM). Consider, for instance, two traders such that each returned a profit of $10 million over the last year. The first is a foreign currency trader, and second a bond trader. The question is, how do we compare their performance? This is important in providing appropriate compensation as well as deciding which line of activity to expand.

Assume the FX and bond traders have notional amount and volatility as described below. The bond trader deals in larger amounts, $200 million, but in a market with lower volatility, at 4% per annum, against $100 million and 12% for the FX trader. The risk capital can be computed as a VAR measure, say at the 99% level over a year, as Bankers Trust did. Assuming normal distributions, this translates into a risk capital of

RC = VAR = $100,000,000 X .12 x 2.33 = $28 million

The risk adjusted performance is then measured as the profit divided by the risk capital,

RAPM = Profit/RC

Thus the bond trader is actually performing better as the FX trader, as the activity requires less risk capital. More generally, risk capital should account for credit risk, operational risk, and any interaction.

RAROC Methodology

Risk Management: Includes the measurement of portfolio exposure, the volatility and correlations of the risks factors.

Capital Allocation: This requires the choice of a confidence level and horizon for the VAR measure, which translates into an economic capital.

Performance Measurement: This requires the adjustment of performance for the risk capital.

Performance measurement can be based on RAPM method. For instance, Economic Value Added (EVA) focuses on the creation of value during a particular period in excess of the required return on capital. EVA measures the residual economic profit as

EVA = Profit - (Capital X k)

Where profits are adjusted for the cost of economic capital, with k defined as the discount rate. Assuming the whole worth is captured by the EVA, the higher the EVA, the better the product or project.

NaBFID

- NaBFID has been set up as a Development Financial Institution (DFI) to support the development of long-term infrastructure financing in India. With this, India has seen the birth of a new entity in the financial market.
- The National Bank for Financing Infrastructure and Development (NaBFID) Act, 2021 received the assent of the President on 28 March, 2021 and was enforced on 19 April, 2021.
- Unlike banks, DFIs do not accept deposits from people. They source funds from the market, government, as well as multi-lateral institutions, and are often supported through government guarantees.

Case Study (BFM)

1)On 1 June 2016, a customer requests to book forward contract, for retirement of import bill for USD 100,000.00, due for payment on 15 September 2016. Given rates: Spot USD/INR 68.27/29, forward premium - Spot June: 10/12, Spot July 21/23, Spot August 32/34, Spot Sept. 43/45 and August to 15th Sept. 6/7 Charge Margin of 0.20% on the spot rate.

Answer

Being a merchant sale forward booking transaction, rate would be calculated as under:

USD/INR spot to be taken as
68.29

Premium payable:

Spot August	34 paise	
August - 15th Sept.	07 paise	
Add: Total premium	41 paise	0.41

Thus IB forward rate would be:	68.70
Add: Margin 0.20%	0.14
Rate for customer	**68.84**

2)Your foreign correspondent maintaining a NOSTRO Rupee account with your bank, wants to fund his account by purchase of Rs. 30.00 million, against US dollars. Assuming that the USD/INR interbank market is at 68.2550/2650, what rate would be quoted to the correspondent, ignoring exchange margin. Calculate amount of USD you would receive in your USD NOSTRO account, if the deal is struck.

Answer

The transaction is to sell Rs. 30.00 million, against US dollars, and the transaction is equivalent to an Inward Remittance for the bank/country. Hence, we would quote the lower of the two rates, i.e. 68.2550 (Sell low maxim).

If the deal is struck, the foreign bank would pay USD 439528.24 to our USD NOSTRO account.

3)M/s BCD wants to remit JPY 100.00 million by TT value spot, as payment of an import invoice. Given that USD/INR is at 68.2500/2600 and USD/JPY is 116.50/60, and a margin of 0.15% is to be loaded to the exchange rate, calculate rate to be quoted and the Rupee amount to be debited to the account of M/s BCD.

Answer

Since JPY is to be sold against Rupee, and the rate is not directly given, we would use cross rate mechanism to calculate the same.

We need to buy JPY against USD and USD against INR for the deal.

Thus, USD/INR rate would be 68.2600 (market USD selling rate - high) and USD/JPY at 116.50 (market JPY selling rate - low). The JPY/INR rate would be 68.2600/116.50 = .58592 per JPY

i.e. per 100 JPY	Rs. 58.5923
Add: Margin of 0.15	0.0879
	58.6802
Rounded off to	**58.68**

Total Rupee amount to be debited to the account of M/s BCD would thus be **Rs. 586,80,000.00**

[Note: JPY is quoted as per 100 Yen, as per FEDAI guidelines]

4) You are required to book forward sale contract for USD 1.00 million delivery 3rd month and another forward purchase contract for USD 2.00 Million for delivery 2nd month. Given that USD/INR spot is 68.9100/9200, premium quoted as under, calculate rates for merchant transactions, if the exchange margin of 0.15% is to be loaded for the purchase transaction and 0.20% for the sale transaction. Rate to be quoted to nearest 0.25 paise.

Premium (in paise):	1 m	0750/0850
	2 m	1800/1900
	3 m	2750/2850

Answer

(a) Calculation of rate for forward sale of USD 1.00 million:

Spot rate to be taken (higher rate of the market)	68.9200
3 m premium to be charged	0.2850
	69.2050
Add: Margin 0.20% (on spot rate)	0.1378
Rounded off to	69.3428 or **69.33425**

(b) Calculation of rate for forward purchase of USD 2.00 million:

Spot rate to be taken (lower rate of the market)	68.9100
1 m premium to be paid/passed on 0.0750	
	68.9850
Margin 0.15% (Less) 0.1035	
Rounded off to	**68.8815 or 68.8825**

Note: For a sale contract premium for the full period, up to end date of the contract shall be charged, i.e. full 3 months, whereas, for purchase contract, premium would be passed on only up to the beginning of the contract period, i.e. only up to the start date, or for 1 month only.

5)A forward purchase contract for USD 500,000.00 booked 2 months back at 69.2500 is due for delivery 2 days later (spot date). The customer is informed by the drawee of the bill that the payment will be delayed by one month.

Given that the interbank spot is 67.5675/5775 and one month forward premium is 09/10 paise, and margin on TT buying and TT selling would be 0.15%, calculate rate for cancellation of the existing contract and also give indicative rate for re-booking of one month fixed date or option contract beginning one month from spot date.

Also, calculate the amount to be debited/credited to the customer's account on spot date, upon cancellation of the contract. Rate to be quoted to nearest 0.25 paise.

Answer

(a) The existing forward contract would have been booked at TT buying rate, and hence it has to be cancelled at opposite TT selling rate, computed as under:

Interbank USD/INR spot (higher of the two)	67.5775
Add: Margin 0.15%	0.1014
	67.6789
The contract would be cancelled at	**67.6800**

Rupee amount at contracted rate USD 500,000 @ 69.2500 = Rs. 34625000

Less amount at cancellation rate USD 500,000 @ 67.6800 = Rs. 33840000

Amount due to the customer **Rs. 7,85,000**

(to be paid to his account on spot date)

(b) Indicative rate for contract proposed to be re-booked:

If the contract is booked with option of one month beginning spot date:

Interbank rate Less:	67.5675
Margin 0.15% 0.1014	
	67.4661
or say	**67.4650**

This is the rate (Rs. 67.4650) that would be given by the Bank in case the contract is booked option contract beginning one month from spot date.

If the contract is booked for delivery fixed date one month forward, premium for 1 month would be passed to the customer as under:

Interbank rate	67.5675
Less Margin (0.15%) 0.1014	
	67.4661
Add: Premium for one month	0.0900
	67.5561 or 67.5550

CASE 6. Insurance

An LC calls for insurance from warehouse, and insurance to cover 110% of the invoice value.

Bank A negotiates and forwards documents, covering invoice for USD 17920.00 under a Multi model transport document (Combined Bill of Lading) dated 15.03.2017. to the opening bank, under the said LC. The insurance enclosed to the documents is for USD 20,000.00 and is dated 17.03.2017.

As per the Article 28 of UCP, the insurance must indicate the amount of insurance. It should be at least 110%, of the invoice value if the LC is silent on this requirement and the policy cover must not be dated prior to the date of transport document.

In the given scenario, the insurance is dated after the date of multimodal transport document, which should be covering the voyage of goods from the godown of the seller, and is more than the given percentage for insurance coverage, i.e. more than 110%.

Banks would normally accept some difference in insurance coverage which could be due to rounding off of the values/cover amount, but can still point out as a discrepancy and refuse the documents, in case the insurance cover falls below 110% of the invoice value. However, a document dated after the date of shipping document, is clearly a discrepancy, and requires specific approval from the applicant.

Case 7. Partial Shipments

An LC, covering shipment of 1000 cartons consisting of 15000 pieces of shirts, (readymade garments), from Chennai port to Dubai port, provides that partial shipment is not allowed.

The beneficiary hands over 500 cartons of Shirts, to the shipping company on 15.05.2017 and another 500 cartoons on 18.05.2017.

The Shipping Company issues BL for the first 500 cartons on 17.05.2017 and another BL covering 500 cartoons on 19.05.2017. Both the consignments are to be shipped by a vessel that is due to leave Chennai port on 21.05.2017. Thus the total goods under the LC, i.e. 1000 cartons, are shipped on a single vessel, but with two BLs.

The LC issuing bank, on receipt of documents drawn under the LC rejects the documents, stating the shipment is not made under one BL and as such constitutes partial shipment, which is not permitted under the LC. The issuing bank, informs the negotiating bank that goods are held at their disposal and further instructions are awaited.

As per article 31 of UCP, a presentation of documents consisting of more than one set of transport documents, covering shipment of goods on the same means of transport and has same journey, will not be considered as partial shipment, even if they indicate different dates of shipment.

As such, in the given scenario, the rejection of documents by the LC opening bank is not correct as per the Article 31 of UCP, and the bank must pay/honour the documents.

Illustration on credit risk mitigation:

Case 8

An exposure of Rs. 100 lakhs is backed by financial collateral of A+ debt security of Rs. 30 lakhs issued by others. The tenor of the exposure is 3 years. The residual maturity of the financial collateral is 2 years.

In this case, the financial collateral is an eligible credit risk mitigant.

As the residual maturity of the collateral is less than the residual maturity of the exposure, maturity mismatch is also there. However, there is no currency mismatch.

Let us first determine the hair cut of the collateral.

$$C^*=C \times (1 - HC-H_c - Hfx) = 30 \times (1 - 6\% -0\%) = 30 \times 94\% = 28.20$$

Where C* = Haircut adjusted collateral value

C = Original collateral value

H_c = Hair cut applicable to the collateral

Hfx = Hair cut on account of currency mismatch between

collateral and exposure.

Hfx = 0.08 in all cases where this is applicable.

Let us now determine what would be the value of the haircut-adjusted collateral after adjustment on account of maturity mismatch.

$$P=C^* \times (t - 0.25)/(T-0.25) = 28.2 \times (2 - 0.25)/(3 - 0.25) = 28.2 \times 1.75/2.75 = 17.95$$

Where P = Value of credit risk mitigant adjusted for maturity mismatch.

C* = value of the collateral adjusted for any haircut.

t = minimum of T and residual maturity of the credit protection expressed in years.

T = minimum of 5 years and residual maturity of the exposure expressed in years.

The adjusted collateral value is Rs. 17.95 lacs. The value of the exposure after risk mitigation would be E = Max {0, (current value of exposure - value of the adjusted collateral for any haircut and maturity mismatch)} = Max {0, (100 - 17.95)} = 82.05

Net Exposure qualifying for Capital Adequacy is Rs. 82.05 lacs.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