MAKERERE UNIVERSITY BUSINESS SCHOOL

LECTURE NOTES

PROGRAM: BCOM

COURSE UNIT: BANK MANAGEMENT

YEAR OF STUDY: THREE

SEMESTER: ONE

FACILITATOR: ROBERT OBELE

TOPIC: RISK MANAGEMENT IN BANKING

Objectives

- Introduce the concept of risk in banking
- Appreciate the importance of risk management in banking
- Understand the types of bank risks
- Appreciate the risk management function in banking

Ice breaker;

The story SVB

Risks and Risk Management in the Banking Sector

The Banking sector has a pivotal role in the development of an economy. It is the key driver of economic growth of the country and has a dynamic role to play in converting the idle capital resources for their optimum utilisation so as to attain maximum productivity (Sharma, 2003). In fact, the foundation of a sound economy depends on how sound the Banking sector is and vice versa.

In Uganda, the banking sector is relatively strong at present but at the same time, banking is considered to be a very risky business. Financial institutions must take risk, but they must do so consciously. However, it should be borne in mind that banks are very fragile institutions which are built on customers' trust, brand reputation and above all dangerous leverage. In case something goes wrong, banks can collapse and failure of one bank is sufficient to send shock waves right through the economy. Therefore, bank management must take utmost care in identifying the type as well as the degree of its risk exposure and tackle those effectively. Moreover, bankers must see risk management as an ongoing and valued activity with the board setting the example.

As risk is directly proportionate to return, the more risk a bank takes, it can expect to make more money. However, greater risk also increases the danger that the bank may incur huge losses and be forced out of business. In fact, today, a bank must run its operations with two goals in mind – to generate profit and to stay in business. Banks, therefore, try to ensure that their risk taking is informed and prudent. Thus, maintaining a trade-off between risk and return is the business of risk management. Moreover, risk management in the banking sector is a key issue linked to financial system stability. Unsound risk management practices governing bank lending often plays a central role in 80 financial turmoil,

Definition of Risk

Risk in finance is defined as the randomness of the return of investments, including both positive and negative outcomes. Under this view, a greater expected return is associated with a greater variability of outcomes.

In the financial industry, the view of risk is different. Risk is defined by the uncertainty that has adverse consequences on earnings or wealth, or the uncertainty associated with negative outcomes only. This view is that of regulators and risk managers. Regulations aim at enhancing the resiliency of financial firms and of the financial system in stressed conditions. Risk managers see their role as being accountable for identifying, assessing and controlling the likelihood and the consequences of adverse events for the firm.

Risk; A risk can be defined as an unplanned event with financial consequences resulting in loss or reduced earnings.

Concept of Risk management

Risk management in banking refers to the process of identifying, assessing, monitoring, and mitigating financial and non-financial risks that could adversely affect a bank's capital, earnings, and reputation. Effective risk management ensures stability and supports the bank's long-term profitability.

This discipline involves the implementation of strategies and practices designed to minimize potential losses stemming from various types of risks, including credit, market, operational, and liquidity risks, among others.

In an increasingly complex and dynamic environment, characterized by evolving economic and regulatory conditions, the ability to effectively identify, assess, and address risks is crucial for ensuring business continuity and maintaining the confidence of stakeholders, including bank customers, shareholders, and regulators.

Beyond safeguarding the solvency of banking institutions, risk management is integral to preserving the stability of the global financial system.

Importance of Risk Management

Protection Against Insolvency: Effective risk management is essential for ensuring a bank's ability to operate even in challenging circumstances. Without a robust risk management framework, financial institutions become vulnerable to catastrophic losses, particularly from credit and liquidity risks. For instance, credit risk can lead to widespread defaults if borrowers fail to fulfil their obligations. Similarly, liquidity risk can impair a bank's capacity to meet short-term financial commitments, disrupting normal operations and, in severe cases, resulting in insolvency.

Stability of the Financial System: Banks are interconnected with the rest of the global financial system, and the collapse of one institution can have cascading effects on other economic sectors. Risk management serves as a preventive measure, ensuring that a bank can absorb economic shocks and minimize their impact on the financial system as a whole. This stability is crucial not only for banking operations but also for the public's confidence in the financial system.

Regulatory Compliance: Financial institutions are subject to a strict set of national and international regulations. One of the key frameworks for the banking sector is the Basel III Accord, which establishes global standards for the prudential regulation of banks, aimed at enhancing the resilience of institutions in the face of financial crises. Efficient risk management enables banks to not only meet these regulatory requirements but also avoid penalties and sanctions, ensuring compliance and preserving the integrity of their operations.

Reputation Preservation: In addition to direct financial risks, banks must also contend with reputational risk, which can be significantly affected by inadequate risk management. Financial scandals, unexpected losses, and liquidity crises have the potential to undermine the trust of clients and investors. Strong risk management practices are essential for safeguarding a bank's reputation—an invaluable asset that plays a vital

role in attracting and retaining clients, securing investor confidence, and fostering partnerships with business stakeholders.

Loss Mitigation: Finally, risk management allows banks to minimize potential losses, ensuring profitable operations even in challenging economic conditions. By proactively identifying and mitigating risks, financial institutions can safeguard their profits and maintain sustainable operations in the long term. This not only enhances financial performance but also increases investor confidence and strengthens market competitiveness.

Types of Banking Risks

The banking sector is inherently exposed to a wide range of risks that can negatively impact its operations, profitability, and financial stability. To ensure its sustainability, financial institutions develop risk management strategies that allow them to identify, assess, and mitigate these challenges.

Financial risks vs Non-financial risks

Financial risks include; credit risk, liquidity risk, market risk

Non-financial risks include; operational risks, compliance risk, strategic/business risk, IT risk

CREDIT RISK

Credit risk: is one of the most common and relevant risks for banks, referring to the possibility of default by debtors. It occurs when borrowers, whether individuals, companies, or governments, fail to meet their financial obligations as agreed, resulting in losses for the financial institution.

Credit risk is therefore the risk that a borrower or counterparty will fail to meet its obligations (default) according to the agreed terms or deteriorate in credit quality, causing a loss to the lender. It is often the largest risk for commercial banks given their loan portfolios.

The goal of credit risk management is to maximise a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters.

In banking, credit risk management is essential because lending is a core business activity, and unmanaged losses can threaten solvency and capital adequacy.

Therefore, banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions.

Banks should also consider the relationships between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organisation.

For most banks, loans are the largest and most obvious source of credit risk; however, other sources of credit risk exist throughout the activities of a bank, including in the banking book and in the trading book, and both on and off the balance sheet. Banks are increasingly facing credit risk (or counterparty risk) in various financial instruments other than loans, including acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions.

Credit risk thus, comprises counterparty risk, settlement risk, country/ sovereign risk and concentration risk.

• Credit default risk/Counterparty risk: The risk of loss to the bank because of failure by the counterparty to meet its financial and/or contractual obligations to the bank.

• Settlement risk: The risk of loss to the bank from a transaction settlement, where value is exchanged, failing such that the counter value is not received in whole or part.

• Country/Sovereign risk: Country and cross border risk is the risk of loss arising from political or economic conditions or events in a particular country which reduce the ability of counterparties in that country to fulfil their obligations to the bank.

- Concentration risk: Concentration risk is the level of risk that arises from exposure to a single counterparty or sector, and it offers the potential to produce large amounts of losses that may threaten the lender's core operations. The risk results from the observation that more concentrated portfolios lack diversification, and therefore, the returns on the underlying assets are more correlated.
- For example, a corporate borrower who relies on one major buyer for its main products has a high level of concentration risk and has the potential to incur a large amount of losses if the main buyer stops buying their products.

There are three characteristics that define credit risk:

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

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

3. The recovery rate (that is, how much can be retrieved if a default takes place).

Note that, the larger the first two elements, the greater the exposure. On the other hand, the higher the amount that can be recovered, the lower the risk.

Key Parameters: PD, LGD, EAD

In order to minimize the level of credit risk, lenders should forecast credit risk with greater accuracy.

To quantify credit risk, three fundamental parameters are used:

Probability of Default (PD): the likelihood that a borrower will default within a given time horizon (often one year).

Loss Given Default (LGD): the percentage of exposure the bank loses after accounting for recovery or collateral.

Exposure at Default EAD: the amount owed by the counterparty at the time of default.

Expected Loss = PD×LGD×EAD

Mitigating credit risk

Banks employ several strategies to reduce credit risk:

- Collateral
- Guarantees
- Netting & close-out
- Credit derivatives (e.g. Credit Default Swaps)
- Securitization; converting loan portfolios into tradable instruments.

Regulatory & Capital Implications

Under Basel (II/III), banks can use either the Standardized Approach or Internal Ratings Based (IRB) approach:

Standardized uses external ratings (e.g. Moody, S&P) to assign risk weights

IRB allows banks to estimate PD, LGD, EAD internally subject to supervisory approval

Illustration

Qualitative disclosure on Stanbic bank's use of external Credit ratings under the standardized approach for credit risk.

The bank uses internally generated credit ratings, which rely on both quantitative and qualitative data, to inform the lending decisions.

In the case of corporate, bank and sovereign exposures, external agency, Standards and Poor's (S&P), credit rating of the counterparty is referenced if a rating is available. In the case of obligors for which there are no credit ratings available, exposures are classified as unrated.

Stanbic Bank Uganda uses a 25-point master rating scale to quantify the credit risk for each borrower. This master credit rating scale is indicatively aligned to S&P as demonstrated below.

Stanbic Bank Scale	GRADING	STANDARD & POOR'S
1 – 4	Investment grade	AAA, AA+, AA, AA-
5 – 7		A+, A, A-
8 – 12		BBB+, BBB, BBB-
13 – 20	Sub-investment grade	BB+, BB, BB-,B+, B, B-
21 – 25		CCC+, CCC, CCC-
Default	Default	D

LIQUIDITY RISK

Liquidity risk is defined as the risk that the bank, although balance-sheet solvent, cannot maintain or generate sufficient cash resources to meet its payment obligations in full as they fall due (as result of funding liquidity risk), or can only do so on materially disadvantageous terms (as a result of market liquidity risk).

Types of Liquidity Risk

Funding liquidity risk; The risk that a bank cannot raise funds quickly at a reasonable cost. It is the risk that the counterparties, who provide the bank with funding, will withdraw or not roll-over that funding.

Examples; Sudden withdrawal of deposits or difficulty issuing commercial paper.

Market liquidity risk refers to the risk of a generalised disruption in asset markets that makes normal liquid assets illiquid and the potential loss through the forced sale of assets resulting in proceeds being below their fair market value.

Examples; Selling government bonds at fire-sale prices during a crisis.

Sources of Liquidity Risk

- Unexpected withdrawals of deposits or maturing liabilities.
- Credit drawdowns on committed but undisbursed loan facilities.
- Asset-liability mismatches, especially between short-term liabilities and long-term loans.
- Market disruptions that reduce asset liquidity.

- Rating downgrades or loss of market confidence.
- Concentration in volatile funding sources, such as wholesale deposits.

5. Measurement of Liquidity Risk

Liquidity Coverage Ratio

This standard aims to ensure that a bank maintains an adequate level of unencumbered, high-quality liquid assets that can be converted into cash to meet its liquidity needs for a 30-calendar day time horizon under a significantly severe liquidity stress scenario specified by supervisors.

At a minimum, the stock of liquid assets should enable the bank to survive until Day 30 of the stress scenario, by which time it is assumed that appropriate corrective actions can be taken by management and/or supervisors, and/or the bank can be resolved in an orderly way.

Definition of the standard

$$\frac{\text{Stock of high-quality liquid assets}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\%$$

The scenario for this standard entails a combined idiosyncratic and market-wide shock that would result in:

(a)the run-off of a proportion of retail deposits;

(b) a partial loss of unsecured wholesale funding capacity;

(c) a partial loss of secured, short-term financing with certain collateral and counterparties;

(d) additional contractual outflows that would arise from a downgrade in the bank's public credit rating by up to and including three notches, including collateral posting requirements;

(e) increases in market volatilities that impact the quality of collateral or potential future exposure of derivative positions and thus require larger collateral haircuts or additional collateral, or lead to other liquidity needs;
(f) unscheduled draws on committed but unused credit and liquidity facilities that the bank has provided to its clients; and

(g) the potential need for the bank to buy back debt or honour non-contractual obligations in the interest of mitigating reputational risk.

High liquid assets can include; cash, central bank reserves, to the extent that these reserves can be drawn down in times of stress; marketable securities e.g., government bonds and bills; corporate bonds not issued by any financial institutions with a credit rating of at least AA- and also largely traded in deep repo or cash markets.

The term total net cash outflows13 is defined as the total expected cash outflows minus total expected cash inflows in the specified stress scenario for the subsequent 30 calendar days.

Examples of cash outflows include; Retail deposit run-off; Unsecured wholesale funding run-off; Secured funding run-off; Increased liquidity needs related to downgrade triggers embedded in financing transactions, derivatives and other contracts:

Net Stable Funding Ratio

To promote more medium and long-term funding of the assets and activities of banking organisations, the BCBS has developed the Net Stable Funding Ratio (NSFR). This metric establishes a minimum acceptable amount of stable funding based on the liquidity characteristics of an institution's assets and activities over a one-year horizon.

The NSFR is defined as the amount of available amount of stable funding to the amount of required stable funding. This ratio must be greater than 100%.

"Stable funding" is defined as the portion of those types and amounts of equity and liability financing expected to be reliable sources of funds over a one-year time horizon under conditions of extended stress. The amount of such funding required of a specific institution is a function of the liquidity characteristics of various types of assets held, OBS contingent exposures incurred and/or the activities pursued by the institution.

Available stable funding (ASF) is defined as the total amount of a bank's including:

(a) capital;

(b) preferred stock with maturity of equal to or greater than one year;

(c) liabilities with effective maturities of one year or greater;

(d) that portion of non-maturity deposits and/or term deposits with maturities of less than one year that would be expected to stay with the institution for an extended period in an idiosyncratic stress event; and

(e) the portion of wholesale funding with maturities of less than a year that is expected to stay with the institution for an extended period in an idiosyncratic stress event.

The objective of the standard is to ensure stable funding on an ongoing, viable entity basis, over one year in an extended firm-specific stress scenario where a bank encounters, and investors and customers become aware of:

- A significant decline in profitability or solvency arising from heightened credit risk, market risk or operational risk and/or other risk exposures;
- A potential downgrade in a debt, counterparty credit or deposit rating by any nationally recognised credit rating organisation; and/or
- A material event that calls into question the reputation or credit quality of the institution.

Monitoring tools

In addition to the above measurements of liquidity risk, banks can also employ certain metrics as monitoring tools. These metrics capture specific information related to a bank's cash flows, balance sheet structure, available unencumbered collateral and certain market indicators.

Contractual maturity mismatch (Liquidity gap analysis)

The contractual maturity mismatch profile identifies the gaps between the contractual inflows and outflows of liquidity for defined time bands. These maturity gaps indicate how much liquidity a bank would potentially need to raise in each of these time bands if all outflows occurred at the earliest possible date.

2. *Definition and practical application of the metric*

Contractual cash and security inflows and outflows from all on- and off-balance sheet items, mapped to defined time bands based on their respective maturities.

Concentration of funding

This metric is meant to identify those sources of wholesale funding that are of such significance that withdrawal of this funding could trigger liquidity problems. The metric thus encourages the diversification of funding sources

2. *Definition and practical application of the metric*

A. Funding liabilities sourced from each significant counterparty
The bank's balance sheet total
B. Funding liabilities sourced from each significant product/instrument
The bank's balance sheet total
C. List of asset and liability amounts by significant currency

Liquidity Risk Management Techniques

(a) Asset-based strategies

- Holding high-quality liquid assets (HQLA) such as government securities.
- Diversifying asset portfolio to include easily marketable instruments.
- Securitization of assets to free up liquidity.

b) Liability-based strategies

- Diversifying funding sources (retail deposits, interbank, capital markets).
- Extending maturity profiles of liabilities.
- Establishing committed credit lines from other banks.

(c) Contingency planning

- Developing a Contingency Funding Plan (CFP) outlining actions during liquidity stress. A Contingency Funding Plan (CFP) is a set of policies and procedures that serves as a blue print for a bank to meet its funding needs in a timely manner and a reasonable cost. It is a projection of future cash flows sources of a bank under market scenarios including aggressive asset growth or rapid liability erosion.
- Conducting stress testing to evaluate resilience under adverse scenarios. Stress testing involves subjecting institution's liquidity position to several scenarios and assessing whether the institution can withstand liquidity shocks
- Maintaining access to central bank facilities (e.g., discount window).

Governance and Oversight

Effective management requires:

- Board of Directors: Sets risk appetite and approves liquidity strategy.
- Senior Management: Implements and monitors liquidity policies.
- Treasury Department: Manages daily liquidity positions.
- Risk Management Unit: Conducts independent measurement, monitoring, and stress testing.

Market risk

Market risk is the risk that the value of on and off-balance sheet positions of a financial institution will be adversely affected by movements in market rates or prices such as interest rates, foreign exchange rates, equity prices, credit spreads and/or commodity prices resulting in a loss to earnings and capital.

Such positions include those related to interest rate, exchange rate, equity instrument, and commodity. Holding large amounts of instruments or market risk positions may cause adverse impact on financial institutions' income and capital adequacy, especially when market price of such positions is highly volatile.

In addition to trading book positions, financial institutions' banking book positions may be affected from change in interest rate such as held to maturity debt security investments, loans, or deposits from the public, etc. When the interest rate fluctuates, financial institutions' income and/or shareholders' equity value may be affected as well

The risk arising from market risk factors can be categorized into the following categories:

- Interest rate risk
- Commodity risk
- Foreign Exchange risk
- Equity risk

Interest risk rate

Interest rate risk in the banking book" refers to the current or prospective risk to an institution's capital and earnings arising from adverse movements in interest rates which may arise from both on- and off-balance sheet positions in the banking book.

Effects of Interest Rate Risk

Earnings

Net Interest Income (NII): Banks earn income from the difference between interest earned on loans and interest paid on deposits. When interest rates rise, interest expenses on deposits may increase faster than income from loans, reducing profits.

Impact on Economic Value (Balance Sheet Effects)

Decline in market value of fixed rate assets; Rising interest rates reduce the market value of existing fixed-rate bonds and loans because investors prefer new instruments with higher yields.

Capital Erosion: Losses from the fall in asset values can directly lower a bank's equity or regulatory capital, affecting capital adequacy ratios.

Equity risk

Equity risk is the risk that a bank may experience loss due to unfavorable movements in equity/ stock prices.

Equity Risk Equity risk relates to taking or holding trading-book positions in equities or instruments that display equity-like behavior (for example, convertible securities) and their derivatives (for example, futures and swaps on individual equities or on stock indexes).

Foreign Exchange risk

Foreign exchange risk is the current or prospective risk to earnings and capital arising from adverse movements in currency exchange rates. The potential for loss arises from the process of revaluing foreign currency positions on both on- and off- balance sheet items.

Commodity Risk

Commodity Risk Holding or taking positions in exchange-traded commodities, futures, and other derivatives presents commodity risk. Commodity prices may be volatile as commodity markets are often less liquid than financial markets, and changes in supply and demand can have dramatic effects on prices.

Non-Financial risks

Operational risk

Operational risk can be defined as the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events. It is important to note that these risks have been around for a very long time and are inherent in the way a bank runs its business. However, practices for managing operational risk have assumed a greater profile because of new requirements under Basel II, which inject more formality into the measurement of operational risk, and in the wake of foreign bank failures that occurred as a result of breakdowns in operational controls.

Operational risk can take various forms. It can involve people (incompetence or fraud), system failures (breakdowns in systems or technology), and process failures (i.e., back-office problems). By its nature, operational risk, which is present in all activities, is difficult to avoid. In contrast to financial risks, such as credit risk and market risk, there are few traded instruments to help mitigate this risk, although in some cases it can be managed through insurance contracts.

Operational risk is typically managed through rigorous internal processes and controls. Banks have a long history of extensive and well-documented formal procedures. Moreover, internal audit groups play an active role in testing internal controls, with support from external auditor

Categories (risk events) of Operational Risk Relevant to the Bank

1. Internal fraud: Losses due to intentional misreporting of positions, employee theft, and insider trading on an employee's own account.

2. External fraud: Losses due to robbery, forgery, cheque kiting, misrepresenting information to obtain financial benefits/ loans, and damage from hacking of computer.

3. Employment practices and workplace safety: Losses arising from workers compensation claims, violation of employee health and safety rules, discrimination claims, and general liability.

4. Clients, products, and business practices: Losses arising from an unintentional or negligent failure to meet a professional obligation to

specific clients (including fiduciary and suitability requirements), or from the nature or design of a product. For example, fiduciary breaches, misuse of confidential customer information, money laundering, and sale of unauthorized products and/ or misselling various products.

5. Damage to physical assets: Losses arising from loss or damage to physical assets from a natural disaster or other events. For example, terrorism, vandalism, earthquakes, fire, and floods.

6. Business disruption and system failures: Losses arising from disruption of business or system failures. For example, hardware and software failures, telecommunication problems, and utility outages.

7. Execution, delivery, and process management: Losses from failed transaction processing or process management, from relations with trade counterparties and vendors. For example, data entry errors, collateral management failures, incomplete legal documentation, unapproved access given to client accounts, and vendor disputes

Compliance risk

"The Basel Committee on Banking Supervision (BCBS) paper defines Compliance risk as "the risk of legal or regulatory sanctions, material financial loss, or loss to reputation a bank may suffer as a result of its failure to comply with laws, regulations, rules, related selfregulatory organization standards, and codes of conduct applicable to its banking activities"

Banking compliance can be broadly segregated in three parts

a) Internal compliance

b) Regulatory Compliance

c) Legal Compliance

The internal compliance means adherence to the internal policies formulated by the bank's Board. Thus, internal compliance would be applicable to all employees of the bank.

The regulatory and legal compliance, on the other hand, is applicable to the bank as a whole. The Bank itself would be responsible for ensuring adherence to the extant statutory and regulatory instructions and also, for abiding by the laws of the land, both in letter and spirit.

The compliance area is critically important in identifying, evaluating, and addressing legal and reputational risks.

Information Technology (IT) Risk

The risk associated with system (including hardware, software, networks) failure and/or outage, as well as failures in technology ownership, operation, adoption, IT practices, partner delivery and execution of IT changes, which has the potential for operational loss, reputational damage, regulatory sanctions, and reduced competitiveness. These days technology enables virtually all the activities in the bank and consumes a huge portion of capital investment and operational expenses. The performance of the bank depends on the reliability and security of its technology. The bank's business relies on accuracy and timely availability of data. Weak controls in technology can lead to processing errors or unauthorised transactions.

The effective management and governance of IT risk depends both on the senior management team including the head of the IT department (the GM/ DGM in charge of IT) and the field functionaries across the bank.

Cyber risk

Cyber risk is the potential of a digital attack on the bank's systems for financial gain – either direct (through cash out attacks) or indirect (through stolen data).

Sustainability (or ESG) risks

Risks to ability of the bank to achieve its strategy arising from the management of the environmental, social and governance risks. This includes the management of the direct and indirect impacts of the bank's business activities on the environment and society in which we operates.

At the bank level, sustainability risks are associated with environmental, social and governance (ESG) factors, which can have adverse effects on a bank's assets, both financial and intangible, such as reputation, as well as the bank's performance. There is also a potential for systemic risk from environmental and social factors, which could pose a threat to global financial stability.

ESG factors include (European Banking Authority, 2020):

● Environmental factors that refer to climate change mitigation and adaptation, as well as the environment more broadly and related risks (e.g. natural disasters);

● Social factors that refer to issues of inequality, inclusiveness, labour relations, investment in human capital and communities;

● Governance factors relate to the governance of public and private institutions and include management structures, employee relations and executive remuneration.

Banks have a crucial role in financing sustainable growth because they are the biggest providers of capital for countries all over the world, so recognising the risks associated with ESG factors are very important in the transition to a more sustainable economy. For example, their decisions not to lend to, or invest in, businesses that are unsustainable (e.g. the fossil fuel industry) can support the switch to a low-carbon economy in line with the Paris Agreement

Risk Management Process

Management of risks begins with identification and its quantification. It is only after risks are identified and measured we may decide to accept the risk or to accept the risk at a reduced level by undertaking steps to mitigate the risk, either fully or partially. In addition, pricing of the transaction should be in accordance with the risk content of the transaction. Hence management of risks may be sub-divided into following five processes.

Risk identification:

Risk identification consists of identifying various risks associated at the transaction level and examining its impact on the portfolio and capital requirement. Risk content of a transaction is also instrumental in pricing the exposure.

Nearly all transactions undertaken would have one or more of the major risks i.e., liquidity risk, interest rate risk, market risk, default or credit risk and operational risk with their manifestations in different dimensions.

Although all these risks are contracted at the transaction level, certain risks such as liquidity risk and interest rate risk are managed at the aggregate or portfolio level. Risks such as credit risk, operational risk and market risk arising from individual transactions are taken cognizance of at transaction level as well as at the portfolio level.

Risk Assessment/Evaluation

Risk assessment/evaluation is the next phase in the risk management process. Once a potential hazard has been identified, they must then be evaluated based on the potential severity of loss and the probability that the risk will occur. Risks are not equal, some risk events are more likely to occur than other, and the cost of each risk event can vary greatly.

Thus, it is important for the risk management strategist in an organization to guess correctly in order to appropriately prioritize the execution of the risk management design. Moreover, an assessment of risk is generally conducted as part of the needs assessment and service planning process.

Risk Control/Mitigation

After measuring risk, an institution should establish and communicate risk limits through policies, standards, and procedures that define responsibility and authority. Institutions may also apply various mitigating tools in minimizing exposure to various risks. Institutions should have a process to authorize exceptions or changes to risk limits when warranted. Hence, the strategies and actions to manage the risk could be subsumed into one or more of these four major categories which include: risk avoidance, risk reduction, risk transfer and risk retention. Each of these techniques could serve as effective instrument in minimizing individual risk and the risk profile of the scheme.

Avoidance (eliminate) This involves the elimination of risk at any cost. This also connotes refusing to undertake any task that could bring risk. For instance, when a bank refuses to grant loan to an enterprise in the real sector for the fear of the loan default risk that is associated with it. Avoidance may seem aggressive and effective and the answer to all risks, however, it is not practical, since it is necessary for banks to take risks in order to obtain financial return.

Reduction (mitigate) Risk reduction involves techniques that minimizes the probability of the loss from occurring through investment of funds. For instance, an international business corporation could hedge foreign currency in order to reduce the risk associated with foreign currency fluctuations. Another example is when companies invest in sprinklers, which are intended to extinguish a fire in order to minimize the risk of loss by fire. Thus, corporations should correctly use risk reduction techniques to minimize their risk. These include the use of letters of credits, collateralization of transactions, netting arrangements etc.

Transfer (outsource or insure) Risk transfer is a risk mitigation approach that includes contractually transferring risk from one party to another. For instance, purchasing insurance policy is the most common form of transferring risk from the entity to another party. The risk is transferred from the project to the insurer issuing the policy. In effect, the insurance may be labelled more correctly as a post-event compensatory mechanism. A bank may purchase fire or robbery insurance that would cover the risk of loss by fire or loss of money due to arm robbery. The purchase of insurance is usually outside the control of the corporations. Risk transfer

tactics are important element of a risk management plan, because they enable a unit to reduce its risks of taking on another entity's liability unknowingly, or from being exposed to additional liabilities due to the actions of others.

Retention (accept and budget) Risk retention is a form of self-funding of losses and the most common risk financing technique, especially when the loss values are relatively low. Indeed, this technique remains a viable strategy for small risks. It is employed as a way of keeping a portion of financial or operating risk as against transferring or hedging. Corporations employ this technique, after determining that the cost of shifting risk to an insurance corporation is higher over time than the cost of absorbing the risk, thereby paying for losses out of their own reserve fund. In effect, it means accepting the loss when it occurs. The merit of adopting this strategy is to incentivize corporations to adopt loss prevention projects, thereby minimizing the total cost of risk.

Risk Monitoring:

Institutions should put in place an effective management information system (MIS) to monitor risk levels and facilitate timely review of risk positions and exceptions. Monitoring reports should be frequent, timely, accurate, and informative and should be distributed to appropriate individuals to ensure action, when needed.

Risk reporting

Risk reporting and communication is a vital component of the risk management process in banks. It ensures that decision-makers—such as senior management, the board of directors, regulators, and sometimes shareholders; have accurate, timely, and relevant information to understand the bank's risk profile and make informed decisions.

Risk exposures are reported on a regular basis to the board and senior management through governance committees. Risk reports are compiled at business unit level and are aggregated to the enterprise level for escalation through the governance structures based on materiality.