UNIT – VI : RISK AND BANKING BUSINESS

- ✓ Risks are uncertainties resulting in adverse outcome, adverse in relation to planned objectives or expectations.
- ✓ Financial risks are uncertainties resulting in variation of profitability or outright losses.
- ✓ Factors that are responsible for creating uncertainties in cash inflow and cash outflow are the risk elements.
- ✓ Uncertainties in both cash inflow and cash outflow would result in net cash flow or profits.
- ✓ The possible unfavorable impact is the Risk of the business.
- ✓ Lower risk implies lower variability in net cash flow with lower upside & down side potential.
- ✓ Higher risk would imply higher upside and downside potential.
- ✓ Zero risk would imply no variation in net cash flow.
- ✓ A business with large variation in net cash flow would be business with higher risk.
- ✓ Capital requirements would be higher in a business with large variation in net cash flow because of possibilities of high losses.
- ✓ The basic linkage between Risk & Capital is high capital is required incase of high risk and low capital is required incase of low risk.
- ✓ In view of time value of money a plan with steady stream of cash flow will be preferred to a plan with high risk with volatile income flow.
- ✓ If the risk in a business or investment is netted against the return from it, then it is called Adjusted Return On Investment.
- ✓ The Risk adjusted return is key factor in investment decision.
- ✓ The key driver in managing a business is seeking enhancement in RAROC.
- ✓ Banking business lines are many and varied.

- ✓ Banking book includes all advances, deposits and borrowings which arise from commercial and retail banking.
- ✓ Trading book includes all the assets that are marketable.
- ✓ All the assets and liabilities of Banking book are normally held until maturity and accrual system of accounting is applied.
- ✓ Mismatch in maturities of assets and liabilities is known as Liquidity Risk.
- ✓ Interest rate changes at maturity of assets and liabilities affects net interest margin and it is called Interest Rate Risk.
- ✓ Banking book is not exposed to Market Risk.
- ✓ Operational Risk arises due to human failures, omissions, commissions or non-adherence of internal processes external events etc.
- ✓ Banking book is mainly exposed to Liquidity Risk, Interest Rate Risk, Default Risk or Credit Risk and Operational Risk.
- ✓ Trading book assets are normally not held until maturity and positions are liquidated in the market after holding for a period.
- ✓ Mark to Market system is followed incase of trading book assets & difference between market price and book value are taken to the profit and loss account.
- ✓ Trading book mostly consists of fixed income securities, Foreign Exchange holdings and Commodities etc.
- ✓ Trading book is subject to adverse movement in market prices until they are liquidated and this is termed as Market Risk.
- ✓ Trading book is exposed to Market Risk, Credit Risk, Operational Risk and Liquidity Risk.
- ✓ Derivatives (Swaps, Futures, Forward Contracts, Options) are Off – Balance sheet exposure
- ✓ Liquidity Risk arises from funding long term assets out of short term liabilities.
- ✓ Funding Liquidity Risk is inability to obtain funds to meet cash obligations.

- ✓ Time Risk arises from non receipt of expected inflow of funds.
- ✓ Call Risk arises due to crystallization of contingent liabilities.
- ✓ Funding Risk, Time Risk and Call Risk are part of Liquidity Risk.
- ✓ Internal rate of return is the exposure of a bank's financial condition to adverse movements in interest rate.
- ✓ IRR refers to potential impact on NII or NIM or Market value of equity caused by unexpected changes in market interest rates.
- ✓ Gap or Mismatch risk arises from holding assets, liabilities & OBS items with different principal amounts, different maturity dates or different re-pricing dates.
- ✓ If banks use 2 different instruments with different maturities for pricing their assets & liabilities, any non parallel movements in yield curve would effect NII.
- ✓ The risk that the interest of different assets, liabilities & OBS items may change in different magnitudes is termed as Basis Risk.
- ✓ Prepayment of loans, premature withdrawals of term deposits exercise of call / put options is called Embedded Option Risk.
- ✓ Embedded Option Risk is experienced in volatility situations.
- ✓ Uncertainty with regard to interest rate at which the future cash flow could be reinvested is called Reinvestment Risk.
- ✓ Where NIM gets reduced due to movements in interest rates it is called Net Interest Position Risk.
- ✓ The risk of adverse deviations of the market to market value of the trading portfolio due to market movements during the period required to liquidate the transaction is called Market Risk.
- ✓ Market Risk is also referred to as Price Risk.
- ✓ In the financial market bond prices and yields are inversely related.
- ✓ The Price Risk is closely associated with trading book.

- ✓ Forex Risk is the risk that a bank may suffer losses as a result of adverse exchange rate movements.
- ✓ Market liquidity risk arises when a bank is unable to conclude a large transaction in a particular instrument near the market price.
- ✓ Credit Risk is the potential of a bank borrower or counter party to fail to meet its obligations in accordance with agreed terms.
- ✓ Counter party risk is the risk related to non performance of the trading partners due to counter party's refusal or inability to perform.
- ✓ Country risk is a type of Credit Risk, where non-performance by a borrower or counter party arises due to constraints or restrictions imposed by a country.
- ✓ Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events.
- ✓ Strategic and Reputation Risks are not part of Operational Risk.
- ✓ Transaction Risk arises from frauds both internal & external failed business processes and inability to maintain business continuity & manage information.
- ✓ Compliance Risk is also called Integrity Risk.
- ✓ Funding Risk, Time Risk and Call Risks are called Liquidity Risk.
- ✓ Gap or Mismatch Risk, Yield Curve Risk, Basis Risk, Embedded Option Risk, Investment Risk and Net Interest position Risk are Interest Rate Risks.
- ✓ Forex Risk and Market liquidity risk are called Market Risk.
- ✓ Counter party risk and Country risks are called Default Risk or Credit Risk.
- ✓ Transaction Risk and Compliance Risk are called Operational Risk.
- ✓ Strategy Risk is the risk arising from adverse business decisions, improper implementation of decisions or lack of responsiveness to industry changes.
- ✓ Reputation Risk is the risk arising from negative public opinion.
- ✓ Aggregated Risk of the organization as a whole is called Portfolio Risk.
- ✓ Management of risk begins with identification & quantification of risk.

- ✓ Management of risk may be sub divided into A) Risk identification B) Risk measurement C) Risk pricing D) Risk monitoring & control E) Risk mitigation.
- ✓ Risk management in banking business is directed at transaction level as well as at aggregate level.
- ✓ All the risks are concentrated at transaction level.
- ✓ Certain risks such as liquidity risk and interest rate risk are managed at the aggregate or portfolio level.
- ✓ Credit risks, Operational risk & market risk arising from individual transactions are taken cognizance of at transaction level as well as at portfolio level.
- ✓ Guidelines from Corporate level help in standardizing risk content in the business undertaken at the transaction level.
- ✓ Reduction in PLR leads to Basis Risk.
- ✓ Incase of a loan funded with short term liability (Deposit) at the time of maturity of deposit to fund the unpaid portion of loan, bank has to raise funds with different interest rate, this is called Gap or Mismatch Risk.
- ✓ Repayments received from an asset are to be redeployed with a different interest rate which may not be equal to original ROI, this is called Reinvestment Risk.
- ✓ Sensitivity, volatility & down side potential are quantitative measures of risk.
- ✓ Change in market value due to 1% change in interest rate would be a sensitivity based measure.
- ✓ Sensitivity captures deviation of a target variable due to movement of a single market parameter.
- ✓ The volatility characterizes the stability or instability of any random variable.
- ✓ Volatility is the standard deviation of the values of the variable.
- ✓ Risk market relies on quantitative measure of risk.
- ✓ The risk measures seek to capture variations in earnings, market value, loss due to default etc. arising out of uncertainties.

- ✓ Volatility helps us to capture possible variations around the average of target variable both upside and down side.
- ✓ 84.Downside risk has 2 components potential losses & probability of occurrences
- ✓ Downside risk is the most comprehensive measure of risk as it integrates sensitivity and volatility with the adverse effect of uncertainty.
- ✓ The Value At Risk (VAR) is a downside risk measure.
- ✓ Risk in banking transactions impact banks in two ways i.e. Banks have to maintain necessary capital and there is a probability of loss associated with it.
- ✓ Pricing should take into account cost of deployable funds, operating expenses, loss probabilities and capital charge.
- ✓ The key driver in managing a business is seeking enhancement in Risk Adjusted Return on Capital (RAROC)
- ✓ Adopting strategies that eliminate or reduce the uncertainties associated with the risk elements is called Risk Mitigation.
- ✓ For mitigating Credit Risk banks have been using traditional techniques as collateralization by first party claims with cash or securities or landed properties, TPG etc.
- ✓ For mitigating Interest Rate Risk banks use interest rate Swaps, Forward Rate Agreements or financial futures.
- ✓ For mitigating Forex Risks banks are entering Forex Forward Contracts, Forex Options or Futures.

UNIT – VII : RISK REGULATIONS IN BANKING INDUSTRY

- ✓ If Risk taking is not regulated properly, banks may fail and it would have a disastrous effect on the economy.
- ✓ Monetary authorities of the land regulate the functioning of banks.
- ✓ Regulations are to improve the safety of the banking industry by imposing capital requirements in time.
- ✓ Risk based capital means bank's capital in line with risks.
- ✓ Depositors can not impose a real market discipline on banks.
- ✓ Failure of the whole banking system is Systemic Risk.
- ✓ The Risk of settlement that arises from time difference came to be known as Herstatt Risk.
- ✓ Herstatt accident promoted G10 countries to form BCBS at the end of 1974.
- ✓ The BCBS meets four times in a year.
- ✓ BCBS has around 30 technical working groups and task forces that meet regularly.
- ✓ 1988 Basel accord sought to put in place a frame work for minimum capital requirement for banks that was linked to credit exposure.
- ✓ Banks assets were classified in 5 categories based on risk.
- ✓ The different risk weights were 0%, 10%, 20%, 50% and 100%.
- ✓ The risk weights were 0% to Sovereigns debts, 20% to bank debts & 100% to other debts.
- ✓ Banks were required to hold capital equal to 8% of risk weighted value of assets.
- ✓ Tier – I capital or Core capital includes equity & disclosed reserves.
- ✓ The Capital cushion for market risk or price risk was included during 1998 as amendment.
- ✓ Basel – II is needed because of Credit Risk under Basel – I is not enough risk sensitive i.e. no difference in capital requirement based on credit rating.

- ✓ Base – II provides risk treatment on securitisation.
- ✓ Basel – II provides capital incentive for banks with better risk management.
- ✓ Capital requirement under new accord is minimum capital.
- ✓ Liquidity Risk, Interest rate risk of banking book, Strategic & business risks would be under Supervisory review process.
- ✓ As per Basel – II minimum capital is required in respect of Credit Risk, Market Risk and Operational Risk.
- ✓ Methodology for calculating the minimum capital requirement for Credit Risk are Standardized Approach & Internal Rating Based Approach.
- ✓ Internal Rating Based Approach is of two types Foundation Approach and Advanced Approach.
- ✓ Methodology for calculating capital requirement for Market Risk are Internal Models Method, and Standardized Approach.
- ✓ Standardized Approach has two sub models, SA Maturity method & SA Duration method.
- ✓ Methodology for calculating capital requirement for Operational Risk are Basic Indicator Approach, Standardized method & Advanced Measurement method.
- ✓ Pillar – II Supervisory Review Process includes Evaluation of risk assessment, Ensure soundness and integrity of banks, ensure maintenance of minimum capital with PCA for short fall and Prescribe differential capital.
- ✓ Pillar – III is Market Discipline includes Enhance disclosures, Core disclosure
- ✓ and Supplementary disclosure and Timely semi annual disclosure.
- ✓ As per Basel – I & 1998 amendment Minimum Capital required = 8% (Credit Risk + Market Risk)
- ✓ As per Basel – II minimum Capital required = 8% (Credit Risk + Market Risk + Operational Risk)
- ✓ As per Standard Approach of Capital Charge for Credit Risk weights are invariably related to the rating of the counter party.

- ✓ The Standard Approach of Capital Charge for Credit Risk stipulates special treatment of certain exposures on portfolio basis viz Retail & SME etc.
- ✓ One of the most innovative aspects of the new accord is the IRB Approach to measurement of capital requirement for credit risk.
- ✓ The IRB Approach uses bank's internal assessment of key risk drivers as primary inputs to the capital calculation.
- ✓ Probability of default measures the likely hood that the borrower will default over a given time horizon.
- ✓ Loss Given Default measures the proportion of the exposure that will be lost if a default occurs.
- ✓ Exposure At Default measures the amount of the facility that is likely to be drawn in the event of default.
- ✓ Maturity measures the remaining economic maturity of the exposure.
- ✓ As per Basel – II Operational Risk is risk of losses resulting from inadequate or failed internal processes, people and systems or external events.
- ✓ There are three Approaches for calculating Capital Charge incase of Operational Risk. They are A) BIA B) Standardized Approach and AMA.
- ✓ Pillar – II introduces two critical risk management concepts A) The use of economic capital and B) the Enhancement of corporate governance.
- ✓ The focus of Pillar – III is on Market Discipline, designed to complete the capital requirement s and the supervisory review process.
- ✓ Derivatives are OTC instruments, not liquid as market instrument.
- ✓ In a transaction if one of the transacting parties defaults in completing the settlement the other party suffers. This is known as settlement Risk.
- ✓ RTGS is risk free settlement system in India.
- ✓ The Risk free settlement system is put in place to avoid settlement Risk which may lead to Systemic Risk.

UNIT – VIII : MARKET RISK

- ✓ Risk of reduced liquidity in the market to a specific security is called Asset Liquidity Risk.
- ✓ A trading book consists of bank's proprietary position in financial instruments.
- ✓ Debt Security, Equity, Foreign Exchange, Commodities and Derivatives held for trading are covered by Trading Book.
- ✓ Funding Risk arises due to Asset Liability mismatch.
- ✓ Market losses due to deficiency in monitoring of market portfolio comes under Operational Risk.
- ✓ Trading Liquidity is the ability to freely transact in professional markets at the reasonable prices.
- ✓ When liquidity is high the adverse deviations of prices are much lower than in poor liquidity environment.
- ✓ *** 8. Liquidity Risk arises from lack of trading Liquidity.
- ✓ Market Liquidation Risk refers to a situation when there is a general liquidity crunch in the market and it affects trading liquidity adversely.
- ✓ Credit Risk of traded debts is indicated by credit rating.
- ✓ Credit Risk may arise either o/a default or rating migration.
- ✓ ALCO is responsible for implementation of risk and business policies.
- ✓ ALM Support Groups analyses, monitors & reports the Risk profiles to ALCO.
- ✓ The middle office responsible for the critical functions of independent Market Risk monitoring, measurement, analysis and reporting to ALCO.
- ✓ Market Risk Management framework is heavily dependent upon quantitative measures of Risk.
- ✓ Market Risk measures are based on sensitivity & down side potential.
- ✓ Sensitivity captures deviation of market price due to unit movement of a single market parameter.

- ✓ Supply demand position, Interest rate, Market liquidity, Inflation, Exchange rate, Stock prices etc are the market parameters.
- ✓ Sensitivity is measured as change in Market value due to unit change in the variable.
- ✓ Sensitivity measure suffers from the fact that it does not consider impact of other parameters.
- ✓ Sensitivity measure does not remain constant for all the values of variables.
- ✓ Basis Point Value is a risk measure. It changes with remaining maturity.
- ✓ Basis Point Value is the change in value due to one basis point change in market yield.
- ✓ Mecauley's duration was first proposed in 1938 as measure of describing a bond's price sensitivity to yield change with a single number.
- ✓ Downside potential captures only possible losses & ignores profit potential.
- ✓ Value At Risk (VAR) is defined as the predicted worst case loss at a specific confidence level or a certain period of time assuming normal trading conditions.
- ✓ Yield volatility is unaffected by time & duration.
- ✓ Price volatility is unaffected by yield but substantially affected by time & duration.
- ✓ Price Volatility = (Yield volatility * BPV * yield) / Price.
- ✓ There are three approaches to calculate VAR.
- ✓ The Correlation method, Historical Simulation and Monte Carlo Simulation are the approaches to calculate VAR.
- ✓ The Monte Carlo Simulation method calculates the change in the value of a portfolio by using a sample of randomly generated price scenario.
- ✓ Arithmetic moving average from historical time series data & exponential moving average method are methods employed to estimate volatility.
- ✓ VAR uses past data to compute volatility. VAR should be used in combination with stress testing to take care of event risks.

- ✓ Back test is a process where model based VAR is compared with the actual performance of the portfolio.
- ✓ Market value of a portfolio varies due to movement of market parameters.
- ✓ Simple sensitivity test and Scenario analysis are stress testing techniques.
- ✓ Keeping the variance of the value of a given portfolio within given boundary values through actions on limits is called controlling Market Risk.
- ✓ Sensitivity and VAR limits for trading portfolio and accrual portfolios are measured daily.
- ✓ A Risk monitoring process ensures that all transactions are executed and revalued at prevailing market rates.
- ✓ Risk mitigation measures aim to reduce down side variability in net cash flow but it also reduces upside potential or profit potential simultaneously.
- ✓ BVP and Duration are market risk measures based on Sensitivity.
- ✓ VAR is a Market Risk measure based on Downside Potential.
- ✓ In calculating VAR we consider the volatility and correlation of prices with respect of all other assets or liabilities in the portfolio.

- ✓ **UNIT – IX : CREDIT RISK**

- ✓ Credit Risk arises from lending activity.
- ✓ 2.Incase of trading of securities if settlement is not affected it is called Credit Risk
- ✓ Credit risk management processes are 1) Risk identification 2) Risk measurement 3) Risk monitoring & control 4) Risk mitigating.
- ✓ The Board decides the level of Credit Risk for the banks as a whole keeping in view its profit, objectives and capital planning.
- ✓ Credit policy committee is also called Credit Control Committee.
- ✓ Credit Policy Committee deals with issues relating to credit policy and procedures & to analyze, manage, and control Credit Risk on a bank vide basis.
- ✓ Credit Risk Management Department (CRMD) enforces and monitors compliance of the risk parameters & prudential limits set by the Credit Policy Committee.
- ✓ Credit Risk has two components, Default Risk and Credit Spread Risk.
- ✓ In the event of default a fraction of the obligations will normally be paid. This is known as the Recovery rate.
- ✓ Rating Risk will usually be firm specific.
- ✓ Usually the Loans are not marked to market but Credit market portfolios are marked to market.
- ✓ Default Risk and Downgrade Risk are Transaction level Risks.
- ✓ Portfolio Risk has two components Systemic or Intrinsic Risk and Concentration Risk.
- ✓ If a portfolio is fully diversified, then the Portfolio Risk is reduced to a minimum level.
- ✓ System Risk i.e. minimum level risk is the Risk associated with economy.
- ✓ Counter arty Risk and Country Risks are other form of Credit Risk.

- ✓ Measurement of credit risk consists of Measurement of risk through credit rating / scoring & Quantifying the risk through estimating expected loan losses.

- ✓ The primary objective of credit rating is to determine whether the account would remain a performing asset after expiry of a given period.
- ✓ Behavior of a group of borrowers having similar rating may remain same in terms of their failure to meet financial obligations.
- ✓ Lenders in financial market accord rating to account to determine the class to which a borrower belongs.
- ✓ Basing on past record & with the help of rating, possible number of defaults may be estimated.
- ✓ Higher rate of default will be priced higher, thereby the cost of default is recovered.
- ✓ Rating helps in estimating defaults, assessing price and also to assess minimum capital requirement.
- ✓ RBI has issued necessary instructions and guidance to banks to apply credit rating to their borrower accounts and classify them rating wise.

CREDIT RATING APPROACH

- ✓ For managing Credit Portfolio, we need credit rating model and develop and maintain necessary data on defaults of borrowers rating wise.
- ✓ A Credit Rating Model essentially differentiates borrowers based on degree of stability in terms of top line and bottom line revenue generation.
- ✓ If the uncertainty in revenue generation is more chance of failing in keeping financial commitments to the rest of the world is also more.
- ✓ Returns on Government securities is one of the lowest but are rated highest as stability in cash flow is absolute.
- ✓ In developing a rating model factors that have an impact on the stability of revenue generation are relied upon.
- ✓ Rating migration is change in the rating of a borrower over a period of time when rated on the same standard or model.
- ✓ 31.Credit Risk Models offer banks framework for examining Credit Risk Exposure
- ✓ 32. The Altman's Z Score forecasts the probability of a company entering bankruptcy with in 12 months period.
- ✓ 33. Atman's Z Score Model combines five financial ratios using reported accounting information and equity values to produce an objective measure of borrowers financial health.
- ✓ 34. J P Morgan's Credit Matrics basically focuses on estimating the volatility in the value of assets caused by variations in the quality of assets.
- ✓ 35. The volatility is captured by tracking the probability that the borrower might migrate from one rating category to another rating category.
- ✓ 36. Credit SWISS developed a statistical method for measuring and accounting for credit risk which is known as Credit Risk+.
- ✓ 37. The Credit Risk+ model is based on actuarial calculation of expected default rates and unexpected losses from default.
- ✓ 38. The Risk rating should reflect the underlying credit Risk of the loan book.
- ✓ 39. Credit Risk control and Monitoring is directed both at Transaction level and Portfolio level.

- ✓ 40. A comprehensive and detailed MIS & CIS is the backbone for an effective Credit Risk Management system.

- ✓ 41. Credit Risk taking policy and guidelines at transaction level should be clearly articulated in the bank's Loan Policy Document.

- ✓ 42. The banks should evolve multi-tire credit approving system where the loan proposals are approved by an approval grid or committee.

- ✓ Prudential limits serves the purpose of limiting Credit Risk.

- ✓ The Credit Risk assessment exercise should be repeated bi-annually and should be de-linked invariably from the regular renewal exercise.

- ✓ The pricing strategy for credit products should move towards risk based pricing to generate adequate Risk Adjusted Return On Capital (RAROC)

- ✓ In a risk return setting, borrowers with weak financial position are high credit risk stake and should be priced high.

- ✓ The credit control and monitoring at portfolio level deals with the risk of a given portfolio and impact of changing portfolio mix on risk.

- ✓ Monitoring for active Credit Portfolio Management comes from changing demand of traditional products and new business opportunities.

- ✓ The motivation for active credit portfolio management also comes from new opportunities in the economy such as Pass Through Certificates, Syndicated lending etc.

- ✓ Secondary loan trading, Securitisation and Credit Derivatives are tools to manage credit portfolio.

- ✓ Change in demand of traditional products arise due to less demand due to dis intermediation, more supply due to capital mobility and lower returns and increased importance of risk.

- ✓ Loan Review Mechanism is an effective tool for constantly evaluating the quality of loan book and to bring about quantitative improvements in credit administration.

- ✓ Loan Review Mechanism is used for large value accounts.

- ✓ Accurate and timely credit rating is one of the basic components of an effective Loan Review Mechanism.
- ✓ Credit grading involves assessment of credit quality, identification of problem loans and assignment of risk rating.
- ✓ The loan reviews are designed to provide feed back on effectiveness of credit sanction and to identify incipient deterioration in portfolio quality.
- ✓ The scope of review should cover all loans above a cut-off limit.
- ✓ At least 30% – 40% of the portfolio should be subject to LRM

- ✓ **CREDIT RISK MITIGATION;**

- ✓ Credit Risk Mitigation refers to the process through which credit risk is reduced or transferred to a counter party.

- ✓ Recent techniques of Credit Risk Mitigation include buying a credit derivative to offset Credit Risk at transaction level.

- ✓ Asset securitisation and credit derivatives are used to mitigate Credit Risk in the portfolio.

- ✓ Securitisation refers to a transaction where financial securities are issued, against the cash flow generated, from a pool of assets.

- ✓ Originating bank transfers the ownership of assets to SPV and SPV issues financial securities and has the responsibility to service interest and repayments on such financial instruments.

- ✓ Securitisation exposures include asset backed securities, Mortgage backed securities, Credit enhancements, liquidity facilities, interest rate swaps or currency swaps, credit derivatives and staunched cover.

- ✓ A clean up call is an option that permits the securitisation exposures to be called before all of the underlying exposure or securitisation exposure have been repaid.

- ✓ When Credit Risk from all credit assets are unbundled into a commodity and traded in the market separately they are regarded as Credit Derivatives.

- ✓ Credit Derivatives transfer risk in a credit asset without transferring the underlying asset themselves from the books of originator.

- ✓ Credit Derivatives are Over the Counter financial instruments.

- ✓ CREDIT DEFAULTS SWAPS are Off Balance Sheet Items.

- ✓ CREDIT LINKED NOTES are On Balance Sheet Items.

- ✓ Credit Risk Management is based on Credit Rating.

- ✓ TOTAL RETURN SWAPS:

UNIT – X : OPERATIONAL RISK

- ✓ More complex the organization, more exposed to Operational Risk.
- ✓ If Operational Risks are managed well, the rewards are available by way of lessor risk capital and cost reductions in operations.
- ✓ Operational Risks in the organization continuously undergo change especially when an organization is undergoing changes.
- ✓ Losses due to acts of a type intended to defraud, misappropriate property or circumvent the law by a third party is called External Fraud.
- ✓ Loss due to acts of a type intended to defraud, misappropriate property or circumvent regulations, the Law or company policies which involves at least one internal party is called internal fraud.
- ✓ The guidelines in the matter of operational risk provided by Basel – II document are called Sound practices for the management of Operational Risk.
- ✓ Adherence to standard policies is the quantitative requirement of Basel – II.
- ✓ The ORMD should identify and assess Operational Risk inherent in all material products, activities, process and systems.
- ✓ The internal audit function should not be directly responsible for ORM.
- ✓ Base – II has provided options in the measurement of Operational Risk for the purpose of Capital allocation.
- ✓ The Basic Indicator Approach and Standardized Approach are based on income generated.
- ✓ The Advanced Measurement Approach is based on Operational loss measurement.
- ✓ As per Basic Indicator Approach capital requirement for Operational Risk is equal to u.
- ✓ Under Standardized Approach banks activities are divided into eight business lines.
- ✓ The capital charged for each business line is calculated by multiplying gross income by a factor (Denoted beta) assigned to that business line.

- ✓ The regulatory capital requirement under AMA will be equal to risk measure generated by bank's internal Operational Risk Management system.
- ✓ The first step in measurement under AMA is operating profile. The operating profile is identification and quantification of Operational Risk in terms of its components.
- ✓ Prioritization of Operational Risk and identification of risk contractions – hot spots resulting in lower exposure.
- ✓ Insurance cover where available may provide to mitigate Operational Risk.
- ✓ A Bank must use scenario analysis of expert opinion in conjunction with external data to evaluate its exposure to high severity events.
- ✓ When we talk of integration of risk it implies a coordinated approach across various risks.
- ✓ Inter comparison between firms on the basis of profits or profitability ratios does not provide clear picture unless the risk levels are also taken into account.
- ✓ Risk Management is a basic necessity for all F.I. of all sizes and ultimately central to their success and survival.
- ✓ In view of the potential impact and service requirements risk management has become a real time concern.
- ✓ Integrated risk management contributes to better business performance for companies in all industries.
- ✓ Risk Audited Return On Capital (RAROC) can be determined by dividing a unit's net income by its economic capital.
- ✓ RAROC is also an important factor in making risk transfer decisions.
- ✓ The process of integrated Risk Management consists of 1) Strategy
- ✓ 2) Organization 3) Process 4) System.
- ✓ The BOD through Risk Management committee is the apex body responsible for the entire risks of the bank.
- ✓ In an integrated risk management framework the top management should have a historic view of all risks.

- ✓ The impacts of integrated risk management is Basel – II.
- ✓ The third consultative paper of Basel – II suggests classification of Operational Risks based on events.

- ✓ **UNIT – VI : RISK AND BANKING BUSINESS – INOTES**
- ✓ The banking business lines are: 1) Corporate finance 2) Trading & sales 3) Retail banking 4) Commercial banking 5) Payment & Settlement 6) Agency services 7) Asset Management 8) Retail brokerage.

- ✓ From the risk management point of view banking business lines are grouped as 1) Banking book 2) Trading portfolio and 3) Off-Balance sheet exposure.

- ✓ Off – Balance Sheet exposures may become part of Banking book or Trading Book. Therefore Off – Balance Sheet exposures may have Liquidity Risk, Interest rate Risk, Market Risk, Operational Risk and Credit Risk.

- ✓ Risks in Banking business are of five types 1) Liquidity Risk 2) Market Risk 3) Credit Risk or Default Risk 4) Interest Rate Risk and 5) Operational Risk.

- ✓ Operational Risk includes Fraud Risk, Communication Risk, Documentation Risk, Competence Risk, Model Risk, Cultural Risk, External events Risk, Legal Risk, Regulatory Risk, Compliance Risk, Systemic Risk and so on.

- ✓ Compliance Risk is the Risk of Legal or Regulatory sanction, financial loss or reputation loss that a bank may suffer as a result of its failure to comply with any or all of the applicable loans, regulators codes of conduct & standard of good practices.

UNIT – VII : RISK REGULATIONS IN BANKING INDUSTRY

- ✓ Deregulation increased competition between players, which also promoted globalization & unprepared past experiences resulted in increased risks for the system.

- ✓ Tier – II capital or Supplementary capital includes undisclosed reserves, Asset revaluation reserves, general provisions and loan loss reserves, Hybrid (debt equity) capital instruments and Subordinated debts.

- ✓ 1998 Amendments are as under:

- ✓ Banks were allowed to use proprietary in-house models for market risk measuring.
- ✓ Banks using proprietary models must capture VAR daily using 99th percentile, one tailed confidence level with a time horizon of 10 trading days.
- ✓ Capital charge for banks using proprietary models will be the higher of the previous days VAR and 3 times average of preceding 60 days daily VAR.
- ✓ Use of back testing to arrive at plus factor.

- ✓ Always banks to issue short term subordinated debt subject to a lock-in Tier – III capital clause to meet a part of their market risk.
- ✓ Banks to segregate trading book and market to market all position in the trading book.

- ✓ The IRB Approach computes the capital requirements of each exposure directly before computing the RWA . Capital charge computation is a function of the following parameters:
- ✓ Probability of Default (PD) 2. Loss Given at Default (LGD) 3. Exposure At Default (EAD) 4. Maturity (M).

- ✓ Principle – I : Banks should have a process for assessing their overall capital adequacy in relation to their risk profile & a strategy for maintaining their capital kevels.

- ✓ Principle – II : Supervisors should review & evaluate bank's internal capital adequacy assessments and strategies as well as their ability to monitor and ensure their compliance with regulatory capital ratios.
- ✓ Principle – III : Supervisors should expect banks to operate the minimum regulatory capital ratios and should have the liquidity to require banks to hold capital in excess of the medium.

- ✓ Principle – IV : 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 reported.

UNIT – VIII : MARKET RISK – NOTES

- ✓ MARKET RISK is the risk of adverse deviations of the mark to market value of the trading portfolio due to market movements during the period required to liquidate the transaction.

- ✓ A bank's trading book has the risk which arises due to adverse changes in market variables such as Interest rate, Currency Exchange rate, Commodity prices and Market liquidity etc.

- ✓ Risk Management process is sub divided into four categories viz 1) Risk Identification 2) Risk Measurement 3) Risk control & Monitoring 4) Mitigation.

- ✓ Usually Market Risk management Organistion would consists of A) Board of Directors B) The Risk Management Committee C) ALCO D) ALM Support group or Market Risk Group E) The Middle Office.

- ✓ The Risk Management committee is a board level sub-committee. 1) It Sets guide lines for Market Risk Management and reporting 2) It Ensures Market Risk Management process 3) It sets up prudential limits and periodical review 4) It ensures robustness of measurement risk models and 5) It ensures proper managing for the process.

- ✓ The role of ALCO is to encompass 1) Product pricing 2) Maturity profile and mix of incremental assets and liabilities 3) Articulating interest rate 4) Funding policy 5) Transfer pricing 6) Balance Sheet management.

- ✓ Value At Risk means the potential loss in market value under normal circumstances of a portfolio using estimated volatility and correlation for given horizon measured with a given confidence level.

- ✓ Under the correlation method the change in the value of the position is calculated by combining the sensitivity of each component to price changes in the underlying assets.

- ✓ The Historical Simulation approach calculates the change in the value of position by using the actual historical movements of the underlying asset but starting from the current value of the asset. It does not need a variance or convenience matrix.

- ✓ Stress testing essentially seeks to determine possible changes in the market value of a portfolio that could arise due to non normal movement in one or more market parameters.

- ✓ Controlling of Market Risk is achieved through 1) Policy guide lines limiting roles and authority 2) Limit structure and approval process 3) Systems & Procedures 4) Guidelines on Portfolio size and mix 5) Systems for estimating portfolio risk under normal and stressed situations 6) Defined policy for market to market 7) Limit monitoring and reporting 8) Performance measurement and resource allocation.

- ✓ Risk of trading liquidity is managed by avoiding 1) Large market share in any given type of asset 2) Infrequently traded instruments 3) Instruments with unusual tenors 4) One side liquidity in the mar

UNIT – IX : CREDIT RISK – NOTES

- ✓ Usually Credit Risk Management organization consists of 1) Board of Directors 2) The Risk Management Committee 3) Credit policy Committee
- ✓ 4) Credit Risk Management Department.

- ✓ Risk taking through lending activities needs to be supported by a very effective control and monitoring mechanism. Because this activity is widespread and very high share of credit Risk in total risk taking activity of the bank.

- ✓ Instruments of Credit Risk Management at transaction level are A) Credit Appraisal process B) Risk analysis process C) Credit Audit and Loan review
- ✓ D) Monitoring process.

- ✓ Standards and guidelines should be outlined for A) Delegation of powers
- ✓ B) Credit appraisals C) Rating standards and Bench marks D) Pricing strategy
- ✓ E) Loan review mechanism.

- ✓ Credit appraisal guidelines include borrower standards, procedures for analyzing credit requirements and risk factors, policies on standards for presentation of credit proposals financial covenants, rating standards and bench marks etc.

- ✓ Aspects for which Prudential limits may be set are: A) Financial and profitability ratio B) Credit exposures C) Asset concentration D) Large exposures E) Maturity profile of the loan book.

- ✓ Along with rating value of collaterals, value of accounts, future business potentials, portfolio or industry exposure and strategic reasons may also play important role in pricing.

- ✓ Some measures to maintain portfolio quality are:
    - Quantitative ceilings on aggregate exposure B) Evaluation of rating wise distribution of borrowers C) Industry wise and Sector wise monitoring of exposures D) Target for probable defaults and provisioning requirements
- ✓ E) Undertake rapid portfolio reviews F) Introduce discriminatory time schedules for review of borrowers.

- ✓ The main objectives of Loan Review Mechanism are: A) To identify promptly loans which develop credit weaknesses and initiative timely correction B) To evaluate portfolio quality and isolate potential problem areas C) TO provide information for determining adequacy of loan provision D) To asses the adequacy of and adherence to loan policies and procedures E) To provide information to top management with information on credit administration.
- ✓ The Loan Review should focus on : A) Approval process B) Accuracy and timeliness of credit rating C) Adherence to internal policies, procedures and applicable laws or regulations D) Compliance with loan covenants E) Post sanction follow up F) Sufficiency of loan documentation G) Portfolio quality and H) Recommendations for improving portfolio quality.

- ✓ In a Credit Derivative protection buyer enters into an agreement with protection seller, whereby the protection buyer transfers credit risks with reference to a notional value of the reference obligation to the protection seller by agreeing to pay regular premiums to the protection seller. In the instance of a credit event taking place with respect to the reference obligation, there is a settlement between them. Whereby protection seller compensates the protection buyer for the losses incurred as a result of the event.

- ✓ Under physical settlement the Protection buyer delivers the reference asst to the protection seller and in return the protection seller pays the par value plus accrued interest. Incase of cash settlement the protection seller pays the protection buyer the loss suffered.

- ✓ International Swap and Derivatives Association has identified six credit events which are covered under Credit Derivatives. They are 1) Bankruptcy
- ✓ 2) Obligation acceleration 3) Obligation default 4) Failure to pay 5) Repudiation or Moratorium 6) Restructuring.

- ✓ Motives of protection Buyer are 1) Transferring credit risk with out transfer of asset 2) Hedging against Credit Risk 3) Relief in regulatory capital required
- ✓ 4) Better portfolio management.

- ✓ Motives of protection seller are 1) Yield enhancement 2) Speculation
- ✓ 3) Arbitrage in case credit derivative instruments are inefficiently priced
- ✓ 4) Diversification of Credit Risk.

UNIT – X : OPERATIONAL RISK – NOTES.

- ✓ Basel – II document provided guidelines in the matter of OR management practices by way of certain principles that governs the process which is called sound practices for management of OR.

- ✓ OPERATIONAL RISK: Operational Risk would arise due to deviations from normal & Planned functioning of systems, procedures, technology and human failures of omissions and commissions.

- ✓ Operational Risk may also arise due to inherent defaults in systems, procedures and technology which also impacts revenues of an organization adversely.

- ✓ Operational Risk is the risk of loss resulting from inadequate or failed internal processes people and systems or from external events.

- ✓ Classification of Operational Risk based on causes are: 1) People oriented causes – Negligence 2) Process oriented causes – Business volume
- ✓ 3) Technology oriented causes – Poor technology 4) External causes – Natural disasters.

- ✓ Classification of Operational Risk based effects: A) Legal liability B) Loss of damage C) Regulator, compliance and taxation penalties D) Restitution E) Loss of resources F) Write downs.

- ✓ Role of Board: The Board of Directors takes overall responsibility to manage and implement the Operational Risk framework. BOD should approve bank's Operational Risk Management framework and review it periodically.

- ✓ Role of Operational Risk Management Committee: The ORM committee should identify the Operational Risk to which the banks is exposed, to formulate policies and procedures for ORM set clear guidelines on Risk Management / Management and ensure adequacy of risk mitigating controls.

- ✓ Role of Operational Risk Management Department: The ORMD is the nodal department for identifying, managing and quantifying Operational Risk. ORMD in conjunction with groups lays down procedures for management of Operational Risk.

- ✓ The monitoring and control practices encompasses: 1) Collection of Operational Risk data 2) Regular monitoring and feed back mechanism

- ✓ 3) Collection of incidental reporting data to asses frequency and profitability of occurrences or Operational Risk events 4) Monitoring and control of management of large exposures.

- ✓ The options of measurement of Operational Risk as per Basel – II are 1) The Basic Indicator Approach 2) The Standardized Approach 3) Advanced management Approach

- ✓ Gross income is net interest income + net non interest income, gross of any provisions, gross of operating expenses including fee paid to out sourcing exclude realized profits or losses from sale of securities and exclude extraordinary or irregular items as well as income derived from insurance.

- ✓ The beta factor assigned under Standardized Approach are:
    - Retail Banking, Retail Brokerage and Asset Management – 12%
    - Commercial Banking and Agency Services – 15%
    - Corporate finance, Trading & selling, Payment & Settlement – 18%

- ✓ Formulation of bank's strategy for Operational Risk Management and risk based audit estimated level of Operational Risk depends on 1) Probability of occurrence 2) Potential financial impact 3) impact of internal controls.
- ✓ Estimated level of Operational Risk = Estimated probability of occurrence * Estimated potential financial impact * Estimated impact of internal controls.

- ✓ When properly implemented, integrated risk management 1) aligns the strategic aspects of risk with day to day operational activities 2) Facilitates greater transparency for investors and regulators 3) Enhances revenue and earnings growth 4) Controls downside potential.