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Class: TY BSc

Subject : BASEL

Subject Code: PUSASQF606B

Chapter: Unit 1 to 4

Chapter Name: Common Notes of BASEL

1.1 Credit Risk



Credit Risk is the *probability* that a borrower will not pay back a loan *in accordance with the terms of a credit agreement*. This can result from several things:

- Default on a financial obligation
- Increased probability of default on a financial obligation
- More severe loss than expected due to greater-than-expected exposure at default
- Default on payment for goods or services already rendered (*i.e. Settlement risk*)



- *Capacity, Character, Collateral, Capital, Cycle, Covenants, Contracts, Characteristics.*
- Probability of Default (PD), Loss Given Default (LGD), Exposure at default (EAD), Time horizon (M)

1.2 Market Risk



Market risk is the possibility that an individual or other entity will experience losses due to factors that affect the overall performance of investments in the financial markets.

- Financial markets refer broadly to any marketplace where the trading of securities occurs, including the stock market, bond market, forex market, and derivatives market, money market, commodity market, etc.
- These markets may include assets or securities that are either listed on regulated exchanges or else trade over-the-counter (OTC).



▪ *VaR, Expected Shortfall*

1.3 Operational Risk



Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events (*such as regulatory changes, climate catastrophe, etc*).

This definition includes legal risk but excludes strategic and reputational risk.

Operational Resilience is the ability of a bank to deliver critical operations through disruptions.

Operational risk is inherent in banking activities. Risks range from those arising from national disasters, such as hurricanes, to the risk of fraud. The committee intends to improve operational risk management **throughout the banking system**.



- *Severity and Frequency of losses*

1.4 Liquidity Risk



Liquidity relates to a company's ability to meet its obligations as they come due.

In terms of trading, liquidity relates to the ease in which an investment can be unwound.

For any given asset, its sale price is a function of its estimated value (or mid-market price), the speed with which the sale needs to occur, the quantity being sold, and the overall economic environment.

Solvency exists when equity is positive, implying that assets exceed liabilities on the balance sheet.



- *Cash, Treasuries, Retail and wholesale Deposits, trading book liquidation, securitization, borrowing ability, central bank borrowings*

1.5 Investment Risk

Investment risk can be defined as the probability or likelihood of the occurrence of losses relative to the expected return on any particular investment.

It is a measure of the level of uncertainty of achieving the returns as per the expectations of the investor. It is the extent of unexpected results to be realized.

Risk is an important component in the assessment of the prospects of an investment. Most investors while making an investment consider less risk as favorable. The lesser the investment risk, the more lucrative is the investment. However, the thumb rule is the higher the risk, the better the return.

1.6 Legal Risk



There is no standard definition.

Legal risk is the risk of loss to an institution which is primarily caused by:

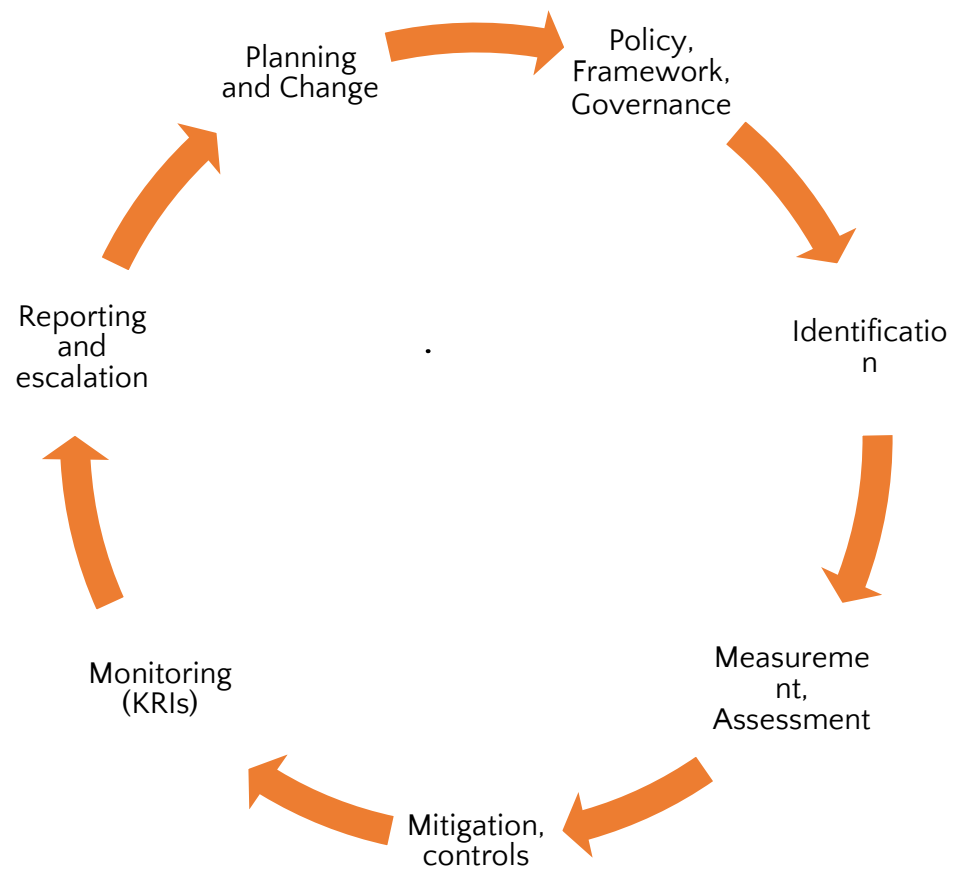
- (a) a defective transaction; or
- (b) a claim (including a defense to a claim or a counterclaim) being made or some other event occurring which results in a liability for the institution or other loss (for example, as a result of the termination of a contract) or;
- (c) failing to take appropriate measures to protect assets (for example, intellectual property) owned by the institution; or
- (d) change in law.

The cost and loss of income caused by **legal uncertainty**, are multiplied by the possibility of the individual event or legal environment as a whole. One of the most obvious legal risks of doing business not mentioned in the above definitions is the risk of arrest and prosecution.



- *Regulatory risks, Compliance risk, Contract risk, Non-Contractual rights, dispute risk*

2 Risk Management Framework



3 Three pillars under Basel

Pillar 1: Minimum Capital Requirements

Pillar 2: Supervisory Review

Pillar 3: Market Discipline

3.1 Pillar 1: Minimum Capital Requirements

The key element of Basel II regarding capital requirements is to consider the credit ratings of counterparties. Capital charges for market risk remained unchanged from the 1996 Amendment. Basel II added capital charges for operational risk. Banks must hold total capital equal to 8% of RWA under Basel II, as under Basel I.

Total capital under Basel II is calculated as:

$$\text{Total capital} = 0.08 \times (\text{credit risk RWA} + \text{market risk RWA} + \text{operational risk RWA})$$

3.2 Pillar 2: Supervisory Review

- Basel II is an international standard governing internationally active banks across the world. A primary goal of Basel II is to **achieve overall consistency** in the application of capital requirements.
- However, Pillar 2 allows regulators from **different countries some discretion in how they apply** the rules. This allows regulatory authorities to consider local conditions when implementing rules.
- Supervisors must **also encourage banks to develop better risk management functions** and must evaluate bank risks that are outside the scope of Pillar 1, working with banks to identify and manage all types of risk.
- Banks were also required to have Internal Capital Adequacy and Assessment Processes (**ICAAP**) that take their risk profiles into account.

3.3 Pillar 3: Market Discipline

- The goal of Pillar 3 is to **increase transparency**. Banks are required to disclose more **information about the risks** they take and the capital allocated to these risks. Qualitative disclosures such as the bank's corporate structure and quantitative disclosures, such as the bank's capital, risk exposures, and risk measures, were required.
- The key idea behind Pillar 3 is that if banks must **share more information** with **shareholders** (and potential shareholders), they will make **better risk management decisions**. Banks have discretion in determining what is relevant and material and thus what should be disclosed.
- Also, using data provided by banks, supervisors fine-tuned the design of the Accord, repeatedly conducting quantitative impact studies (QIS).

3.3 Pillar 3: Market Discipline

According to Basel II, banks should disclose:

- The entities (banks and other businesses such as securities firms in Europe) to which Basel II rules are applied.
- A description of the **characteristics, terms, and conditions of all the capital instruments** held by the bank.
- *A list of the instruments* comprising the bank's Tier 1 capital. The amount of capital provided by each instrument should also be disclosed.
- *A list of the instruments* comprising the bank's Tier 2 capital.
- The capital requirements for each type of risk covered under Basel II: **credit, market, and operational risks**.
- Information about other bank risks.
- ***Information about the bank's risk management function, how it is structured, and how it operates.***

4.1 VaR Calculation



- With Mean:

- $VaR_{\text{1-yr}, 5\%} = [\mu_{\text{annual}} - (z\text{-value} \times \sigma_{\text{annual}})] \times \text{Portfolio Value}$

Handwritten notes: The "1-yr" in the subscript is circled and has "2yr" written below it. A "%" is written below the formula. The "Portfolio Value" is written as "x p v" and followed by "= \$".

- No Mean:

- $VaR_{\text{1-yr}, 5\%} = z\text{-value} \times \sigma \times \text{Portfolio value}$

4.2 Changing VaR time Period



■ Annual:

$$\text{■ } \text{VaR}_{1\text{-yr}, 5\%} = [\mu_{\text{annual}} - (z\text{-value} \times \sigma_{\text{annual}})] \times \text{Portfolio Value}$$

■ Daily:

$$\text{■ } \text{VaR}_{1\text{-day}, 5\%} = [\mu_{\text{daily}} - (z\text{-value} \times \sigma_{\text{daily}})] \times \text{Portfolio Value}$$

$$95\% = 50\% + 1.645$$

$$99\% = 1\% = 2.326$$

CL to be arch
~~Ex~~ Existing CL

μ / days

$\sigma / \sqrt{\text{days}}$

$$\left[* \frac{2.326}{1.645} \right]$$

$$* \frac{\text{TARGET}}{\text{original}}$$

5 Summary of Basel 1 & 2

