MARKET & LIQUIDITY RISK/CAPITAL MANAGEMENT

What is Market Risk?

- According to the Bank for International Settlements (International Convergence of Capital Measurement & Capital Standards: Basel 2 Accord) Market Risk is defined as the risk of losses in; on and off-balance sheet positions arising from movements in market prices. The risks subject to this requirements are:
  - ✓ The risks pertaining to interest rate related instruments & equities in the trading book
  - ✓ Foreign exchange risk and commodities risks throughout the bank
- It is the risk that the value of an institution's position (investment) will decrease due to adverse movement in market factors - Interest & FX Rates, Equity & Commodity Prices.
- Market Risk is therefore the risk to the Bank's earnings and capital due to changes in the market level of Interest Rate, Foreign Currency, Equity prices & Commodity prices. Market risk exists because of interest rate/price changes.

- Market risk can arise from a bank's trading book or banking book. The trading book consist of all securities that the institution regularly buys and sells in the various markets. These securities are accounted for in a different way from those in the banking book which are held by the bank until they mature. They are not affected by market activities.

Market Risks

Interest Rate Risk

Arises when the value of security might fall because of the increase and decrease in the prevailing and long-term interest rates

Foreign Currency Risk

Foreign exchange risk arises because of the fluctuations in the exchange rates between domestic and foreign currencies.

Equity Risk

The last market risk component is the equity price risk, which refers to the change in the stock prices of financial products. As equity is most sensitive to any change in the economy, equity price risk is one of the most significant parts of the market risk.

Commodity Risk

Commodity price risk arises because of fluctuations in commodities like crude, gold, silver, etc. However, unlike foreign exchange risks, commodity risks affect not only multinational companies but also ordinary people like farmers, small business enterprises, commercial traders, exporters, and governments.

Market Risk Management Process

Risk Measurement Techniques

Mark to Market (MTM) - Valuing of Bank's portfolios at the current market price to evaluate the worth of the security rather than the book value. This is being done on day-to-day basis

Value at Risk (VAR) - This is the statistical assessment of the riskiness financial portfolio of assets. It specifically evaluates quantum of risk carriage at a given holding period. It is also a predicted worst-case loss of a position or portfolio at a specific confidence level over a definite period of time.

Sensitivity Analysis - This is a forecasting model technique to determine the effect of a set independent variables on dependent ones under given assumptions.

Stress Testing - Stress Tests are non-statistical tools where risk factors are stressed to assess their impact on the bank. A factor or factors are deliberately pushed to extreme and the impact on the portfolio is measured

Scenario Analysis -This is risk measurement use to estimate the expected value of a portfolio after a given change in the values of key factors take place. Both likely scenarios and unlikely worst-case events can be tested.

The ability of a bank to fund increases in assets & meet maturing obligations or liabilities as they come due without incurring unacceptable losses.

Introduction to Liquidity Risk

Liquidity Risk

Examples

- Inability to meet short-term debt.
- Unable to meet proper funding within a specific time-frame.
- Rise of material causes rises in manufacturing expense for the concern.

Introduction to Liquidity Risk

- Liquidity risk can arise on both sides of asset & liability of the Bank's balance sheet - if either the liquidity generated from selling assets or the liquidity available from funding sources (secured & unsecured) is insufficient to meet financial obligations as they fall due. Liquidity risk can also arise as a result of crystallization of other risks; Market, Operational, Credit, Reputational, Legal, IT, Systemic, etc.

Liquidity risk is therefore aggregated by:

- Liquidity mismatches between assets & liabilities (structural liquidity risk)
- Inability to meet expected and unexpected obligations (funding and contingency liquidity risk)
- Inability to sell its assets at or near its fair value as a result of market disruption or impaired access to the desired markets (market liquidity risk)

- Classification of Liquidity Risk

Funding

Tactical/Short-term	**Ability to fulfil payment obligations as they fall due**
Strategic/Long-term	**Ability to obtain enough long-term funding (issue bonds & notes) at appropriate cost to support growth. Includes core deposits for retail**
Systemic	**Market has capacity & is functioning to provide access to short and medium-term funding through the money, interbank and capital markets**

Market

Traded	**Tradability of securities at reasonable cost and certainty – marketability of assets**

Sources of Liquidity Risk

- Business strategies/policies
- Declining asset quality
- Concentrated funding source
- Volatile funding
- Market volatility
- Changes in regulation
- Rating downgrade
- Maturity mismatch
- High volume of non marketable and illiquid assets
- Aggressive credit extension

Keystone Bank

Early Warning Indicators of Liquidity Risk : Internal Indicators & Market Indicators

A negative trend or significantly increased risk in any area or product line

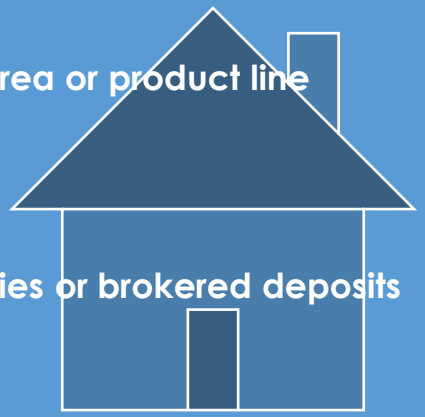
Concentrations in either assets or liabilities

A decline in indicators of asset quality

A decline in earnings performance or projections

Rapid asset growth funded by volatile wholesale liabilities or brokered deposits

A significant decline in liabilities.



Unfavourable rumours about the Bank's financial condition/health

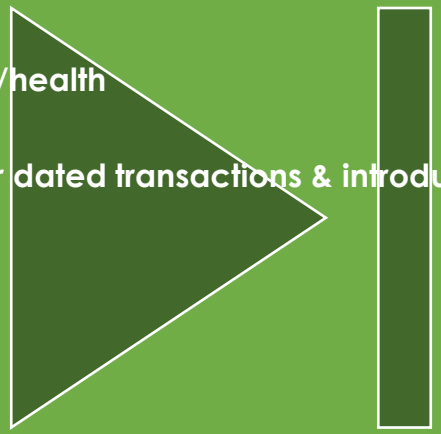
Downgrades of credit rating by rating agencies

Counterparties unwillingness to deal in unsecured or longer dated transactions & introduction of collateral request for accepting credit exposure to the bank

Early withdrawal of requests from depositors for their funds

Flight to quality

High dependence on inter-bank market for funding



Identification of Liquidity Risk for Contingency Purpose

- Lowering of counterparty limits by other banks
- Reported losses in two consecutive quarters for the Bank
- Any of the branch runs out of physical cash for five (5) consecutive days
- Huge negative mismatch between asset and liability over the 0-90 day maturity bucket
- Severe shocks in FCY funding because of bulk withdrawals from Top depositors
- Sudden increase in FCY Non-Performing loans and restructuring when compared to historical levels
- Sudden withdrawal or drastic reduction in trade finance credit lines and usance liability funding provided by one or more offshore correspondent Banks

Measurement of Liquidity of Risk

- **Liquidity Ratio Approach**
  - ✓ Liquidity Ratio – LR
  - ✓ Loan to Deposit Ratio - LDR
  - ✓ Liquidity Coverage Ratio - LCR
  - ✓ Net Stable Funding Ratio - NSFR
- **Liquidity Gap Approach**
  - ✓ Estimating cash flows – Funding Risk Assessment
  - ✓ Liquidity Gap Analysis – Contractual Assessment
  - ✓ Liquidity Gap Analysis – Behavioral Assessment

Control & Monitoring of Liquidity Risk

- The Bank's exposure to liquidity risk is controlled using internally set triggers and limits, to enable timely identification of liquidity risk.
- Also, liquidity risk is closely monitored on a periodic basis by comparing the Bank's actual liquidity positions to set triggers and limits, to enable prompt reporting or escalation (in the event of a flag).

In setting triggers/limits, the following factors are taken into consideration:

- The Bank's risk tolerance.
- The nature of the Bank's funding strategies and activities.
- The Bank's past and current performance.
- Regulatory limits.
- The Bank's level of earnings and capital available to absorb potential losses.
- The Bank's industry standing

Capital Management

What is Capital?

❑Capital refers to the financial resources require by a bank to support & fund its business operations. It is the difference between its assets & liabilities and represent the net worth of the bank or its equity value to investors.

Types of Capital?

❑Equity Capital

❑Debt Capital

Why is Capital So Important in Banks Management?

❑It provides a cushion of protection against risks or unexpected losses and promotes public confidence. It also regulates growth, acts as regulatory tool to limit risk exposure and secures/protects depositors' funds.

- Capital adequacy means that the bank has enough capital on its balance sheet to cover its losses (both present and future losses).

- When a bank makes a loan to a third party there is a risk associated with the transaction. The risk is that the loan may not be recovered, i.e. it goes "bad"

- To protect against this risk, banks are required by the regulator to hold a percentage of the loan on the balance sheet. This is currently set at 10% (for national banks) and 12% (for internationally active banks) by the CBN.

- So, for every N100 lent to a third party an additional N10 or N12 is set aside on the balance sheet as capital.

- The amount of capital that a bank must set aside is known as 'regulatory capital' and is determined by the minimum capital requirement ratio.

Capital Adequacy Ratio be computed using the formula below: Basel 11

Regulatory

$$CAR = \frac{\text{Total Qualified Capital (Tier 1 +Tier 2 Capitals)}}{\text{(RWAs) Credit Risk + Market Risk + Operational Risk}}$$

Economic

$$CAR = \frac{\text{Total Qualified Capital (Tier 1 +Tier 2 Capitals)}}{\text{Total Risks}}$$

- The Basel Accords are three series of banking regulations (Basel I, II, and III) set by the **Basel Committee on Bank Supervision** (BCBS). The committee provides recommendations on banking regulations, specifically, concerning **Capital Risk**. The accords ensure that financial institutions have enough capital on account to absorb any unexpected losses.

- The Basel Accords were developed over several years beginning in the 1980s. The BCBS was founded in 1974 as a forum for regular cooperation between its member countries on banking supervisory matters. The BCBS describes its original aim as the enhancement of "financial stability by improving supervisory knowhow and the quality of banking supervision worldwide." Later, the BCBS turned its attention to monitoring and ensuring the capital adequacy of banks and the banking system.

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Basel 1

- In effect since 1988; very simple in application
- Focused primarily on Credit Risk
- Focused only on Minimum Capital Requirement
- Capital allocation is Less Risk Sensitive
- Easy to achieve significant Capital Reduction with little or no risk transfer
- Capital ratio calculated as (Tier 1 & 2 Capitals/all Credit Risk RWA)

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Basel 2

- More complex in application
- Focused mainly on Credit Risk, Market Risk & Operational Risk
- Consists of three pillars
  - Minimum capital requirement
  - Supervisory/Regulatory review
  - Market discipline/disclosure
- Capital allocation is More Risk Sensitive
- Treats exposures very unequally depending on Exposure Characteristics
- Capital ratio calculated as (Tier 1, 2 & 3 Capitals/Credit, Market & Operational Risks RWAs)

Basel 3

- It builds on the Basel I and II risk and capital management
- Focused on strengthening banks' Risks Coverage and Management System, Regulation & Supervision, Liquidity Quality, Leverage and Transparency
- Raised the Capital Buffer & Quality of Tier 1 and eliminated Tier 3 capital
- Introduced Minimum Liquidity Standards for banks
  - Liquidity coverage ratio >=100%
  - Net stable funding ratio
- Introduced a Leverage Ratio for banks (LR = Tier 1 capital / average total consolidated assets) >=3%


THANK YOU.