Assets Liabilities Management

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Introduction

- Asset Liability Management is concerned with strategic balance sheet management involving risks caused by changes in interest rates, exchange rate, credit risk and the liquidity position of the bank.

- With profit becoming a key-factor, it has now become very important for banks to move towards integrated balance sheet management, where components of balance sheet and its different maturity mix will be looked at profit angle of the bank.

- ALM is about management of Net Interest Margin(NIM) to ensure that its level and riskiness are compatible with risk/return objectives of the bank.

- It is more than just managing individual assets and liabilities. It is an integrated approach to bank financial management requiring simultaneous decision about types and amount of financial assets and liabilities it holds or its mix and volume.

- In addition ALM requires an understanding of the market area in which the bank operates.

- If 50% of the liabilities are maturing within 1 year but only 10% of the assets are maturing within the same period. Though the financial institution has enough assets, it may become temporarily insolvent due to a severe liquidity crisis.

- Thus, ALM is required to match assets & liabilities and minimize liquidity as well as market risk.

SUCCESS OF ALM PROCESS

The ALM process rests on **Three Pillars**:

1. ALM Information Systems
2. ALM Organisation
3. ALM Process

1. ALM INFORMATION SYSTEM

- Decision Support and Reporting Tool.
- Comparison between different Branches.
- Product Analysis .
- Duration Gap Analysis .
- Risk Planning and Management.
- Flexible Design .
- Strategic Planning of the Asset-Liability Mix .
- Simulation Analysis.
- Transfer- Pricing Mechanism .

- Information is the key to the ALM process. Considering the large network of branches and the lack of an adequate system to collect information required for ALM which analyses information on the basis of residual maturity and behavioral pattern it will take time for banks in the present state to get the requisite information.

- The data and assumptions can then be refined over time as the bank management gain experience of conducting business within an ALM framework.

2. ALM ORGANISATION

- Strong Commitment of Senior Management
- ALCO should include the Senior Management

  (including the CEO)
- A Support Group of Operational Staff

ALM Organization

a) **The Board should have overall responsibility for management of risks and should** decide the risk management policy of the bank and set limits for liquidity, interest rate, foreign exchange and equity price risks.

b) **The Asset - Liability Committee (ALCO) consisting of the bank's senior management** including CEO should be responsible for ensuring adherence to the limits set by the Board as well as for deciding the business strategy of the bank (on the assets and liabilities sides) in line with the bank's budget and decided risk management objectives.

c) The ALM desk consisting of operating staff should be responsible for analyzing, monitoring and reporting the risk profiles to the ALCO.

The staff should also prepare forecasts (simulations) showing the effects of various possible changes in market conditions related to the balance sheet and recommend the action needed to adhere to bank's internal limits.

- The ALCO is a decision making unit responsible for balance sheet planning from risk -return perspective including the strategic management of interest rate and liquidity risks.

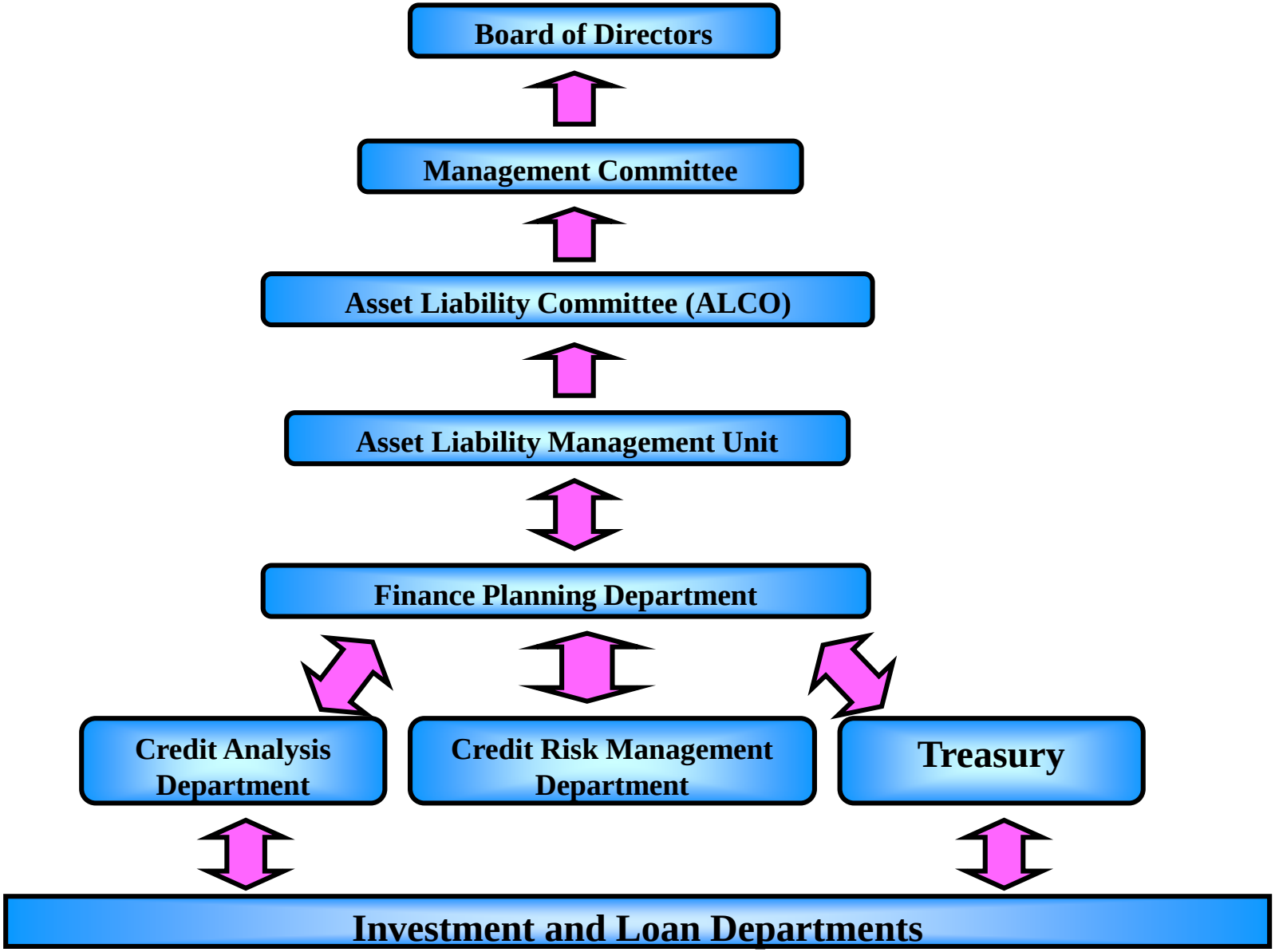
- Each bank will have to decide on the role of its ALCO*, its responsibility as also the decisions to be* taken by it.

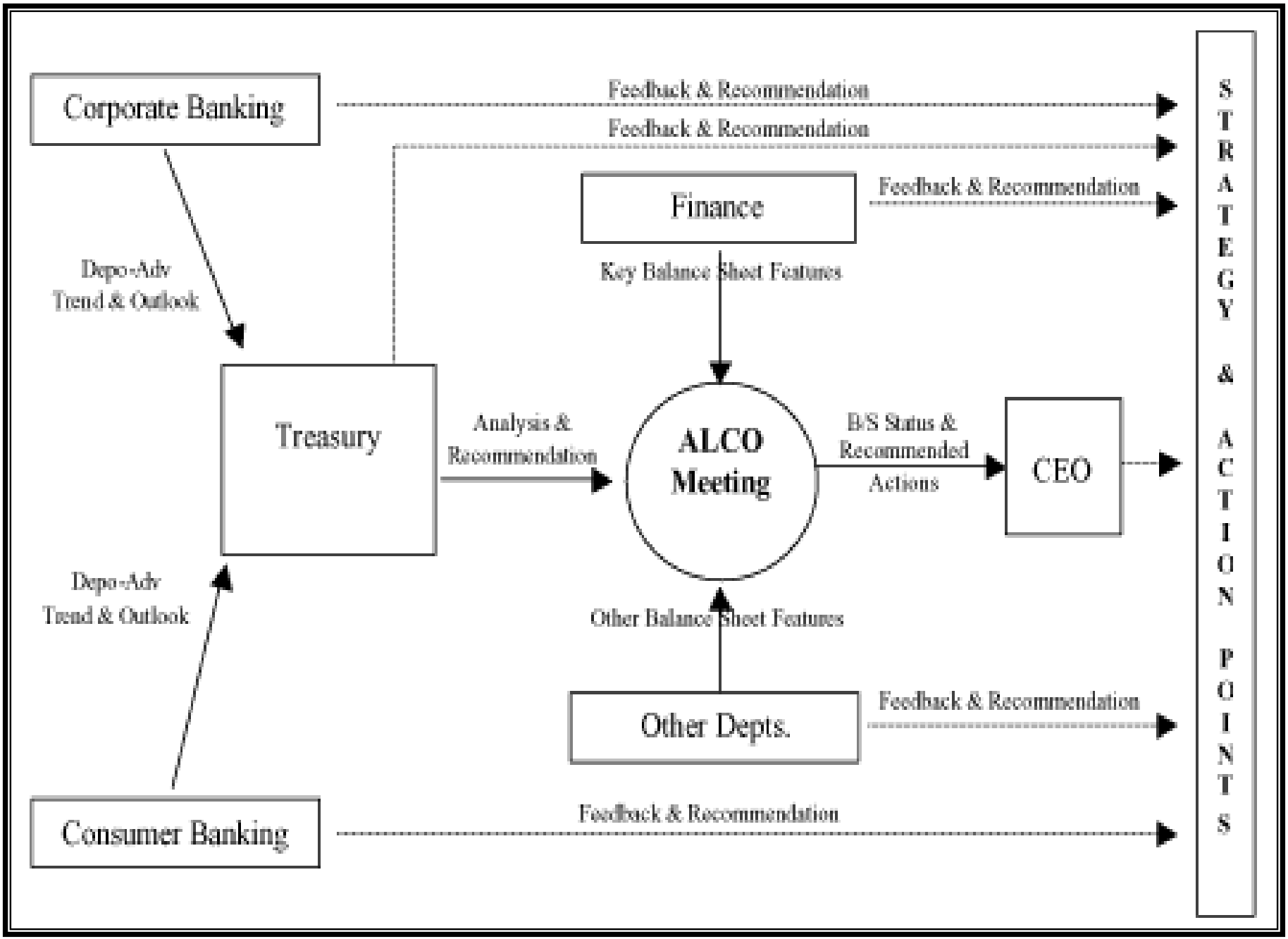
- The business and risk management strategy of the bank should ensure that the bank operates within the limits / parameters set by the Board.

- The business issues that an ALCO would consider, inter alia, will include product pricing for both deposits and advances, desired maturity profile of the incremental assets and liabilities, etc. In addition to monitoring the risk levels of the bank, the ALCO should review the results of and progress in implementation of the decisions made in the previous meetings.
- The ALCO would also articulate the current interest rate view of the bank and base its decisions for future business strategy on this view. In respect of the funding policy, for instance, its responsibility would be to decide on source and mix of liabilities or sale of assets.

- Towards this end, it will have to develop a view on future direction of interest rate movements and decide on a funding mix between fixed vs floating rate funds, wholesale vs retail deposits, money market vs capital market funding, domestic vs foreign currency funding, etc.

- Individual banks will have to decide the frequency for holding their ALCO meetings.


Board of Directors
Management Committee
Asset Liability Committee (ALCO)
Asset Liability Management Unit
Finance Planning Department
Credit Analysis Department
Credit Risk Management Department
Treasury
Investment and Loan Departments


Corporate Banking
Feedback & Recommendation
Feedback & Recommendation
Finance
Feedback & Recommendation
Depo-Adv
Trend & Outlook
Key Balance Sheet Features
Treasury
Analysis &
Recommendation
ALCO
Meeting
B/S Status &
Recommended
Actions
CEO
STRATEGY & ACTION POINTS
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Other Depts.
Feedback & Recommendation
Consumer Banking
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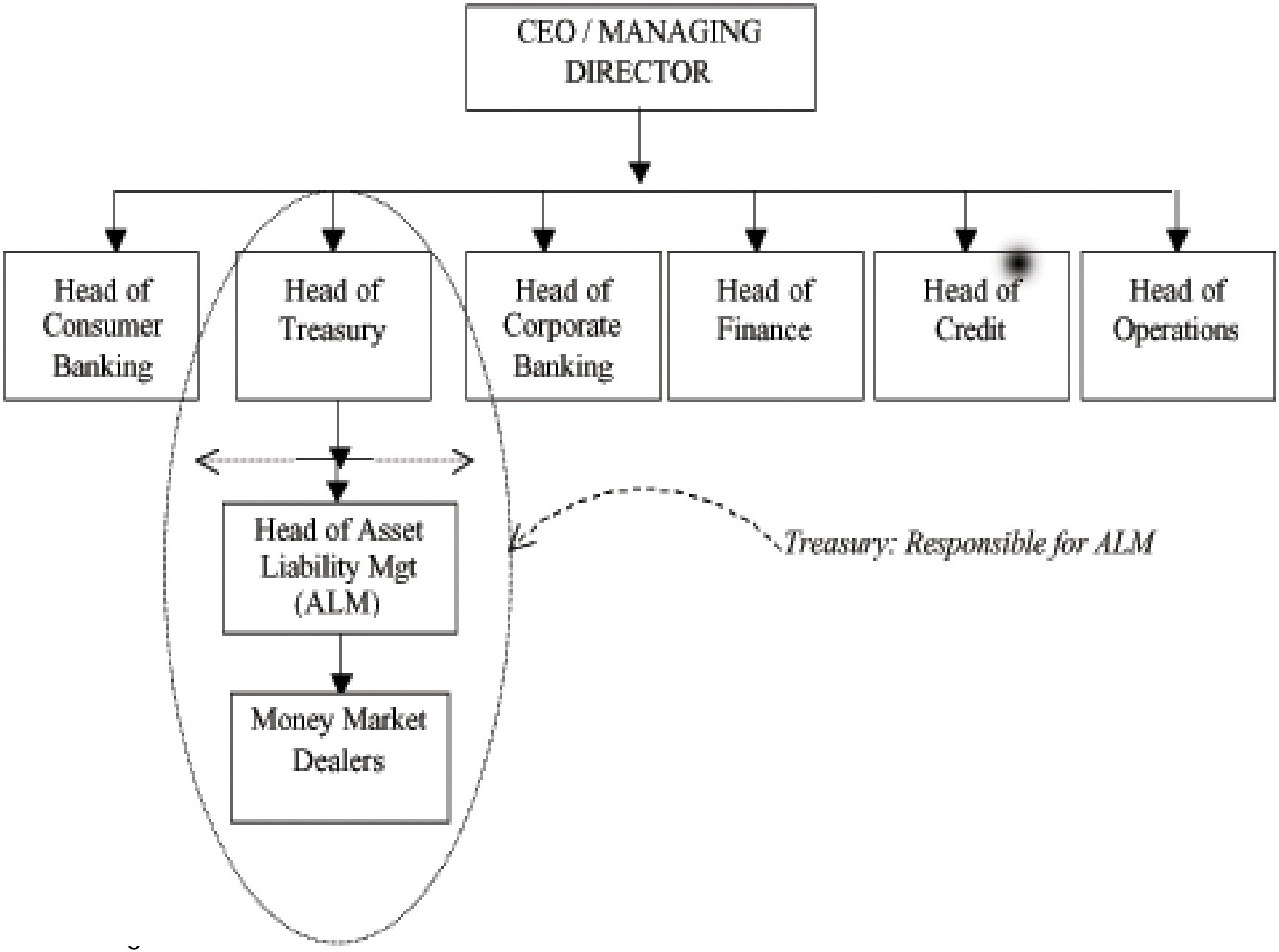
CEO / MANAGING DIRECTOR
Head of Consumer Banking
Head of Treasury
Head of Corporate Banking
Head of Finance
Head of Credit
Head of Operations
Head of Asset Liability Mgt (ALM)
Money Market Dealers
Treasury: Responsible for ALM

3. ALM PROCESS

- The scope of ALM function can be described as follows:
  - Liquidity Risk Management
  - Management of Market Risks
  - Trading Risk Management
  - Funding and Capital Planning
  - Profit Planning and Growth Projection

Risks in ALM

- **Interest Rate Risk:** It is the risk of having a negative impact on a bank's future earnings and on the market value of its equity due to changes in interest rates.

- **Liquidity Risk:** It is the risk of having insufficient liquid assets to meet the liabilities at a given time.

- **Forex Risk:** It is the risk of having losses in foreign exchange assets and liabilities due to exchanges in exchange rates among multi-currencies under consideration.

MANAGEMENT OF
Interest Rate Risk

- Impact on Net Interest Income (NII)
- Long term impact on *market value/ net worth*

- **<u>Techniques:</u>**

1. Gap Analysis
2. Duration Gap Analysis
3. Simulation
4. Value at Risk


ASSET AND LIABILITY MANAGEMENT
1. Strategic Framework
2. Organizational Framework
3. Operational Framework
4. Analytical Framework
5. Technology Framework
6. Information Reporting Framework
7. Performance Measurement Framework
8. Regulatory Compliance Framework
9. Control Framework

Purpose and objectives of asset liability management

- Review the interest rate structure and compare the same to the interest/product pricing of both assets and liabilities.
- Examine the loan and investment portfolios in the light of the foreign exchange risk and liquidity risk that might arise.
- Examine the credit risk and contingency risk that may originate either due to rate fluctuations or otherwise and assess the quality of assets.

- Review,the actual performance against the projections made and analyse the reasons for any effect on spreads.

- Aim is to stabilise the short-term profits,long-term earnings and long-term substance of the bank.

- The parameters that are selected for the purpose of stabilising asset liability management of banks are:

  -Net Interest Income(NII)

  -Net Interest Margin(NIM)

  -Economic Equity Ratio

Net Interest Income:

Interest Income-Interest Expenses.

Net Interest Margin:

Net Interest Income/Average Total Assets

Economic Equity Ratio:

The ratio of the shareholders funds to the assets measures the shifts in the ratio of owned funds to total funds.

MANAGEMENT OF LIQUIDITY RISK

- Availability of funds as & when liabilities are due.
- Liquidity through maturity & cash flow matching.
- Maturity ladder & calculation of cumulative surplus/deficits at selected dates

MANAGEMENT OF LIQUIDITY RISK

Construction of time buckets:

1 to 30/31 days
Over 1 month and upto 2 months
Over 2 months and upto 3 months
Over 3 months and upto 6 months
Over 6 months and upto 1 year
Over 1 year and upto 3 years
Over 3 years and upto 5 years
Over 5 years

LIQUIDITY MANAGEMENT

- Banks need liquidity to meet deposit withdrawal and to fund loan demands.

- The variability of loan demands and variability of deposits determine bank’s liquidity needs.It represents the ability to accommodate decreases in liability and to fund increases in assets.

- It demonstrates the market place that the bank is safe and therefore capable of repaying its borrowings.

Measuring and Managing Liquidity Risk

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

- Setting tolerance level for a bank:

To manage the mismatch levels so as to avert wide liquidity gaps-The residual maturity profile of assets and liabilities will be such that mismatch level for time bucket of 1-14 days and 15-28 days remain around 20% of cash outflows in each time bucket.

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

- **Measuring and Managing Liquidity Risk**

  Stock Approach

  Flow Approach

  Stock Approach is based on the level of assets and liabilities as well as off balance sheet exposures on a particular date.

  -The following ratios are calculated to assess the liquidity position of the bank:

  Ratio of core deposits to total assets

  Net loans to total deposits ratio

  Ratio of time deposits to total deposits

  Ratio of volatile liabilities to total assets

- Ratio of short term liabilities to liquid assets.
- Ratio of liquid assets to total assets.
- Ratio of short term liabilities to total assets.
- Ratio of prime assets to total assets.
- Ratio of market liabilities to total assets.

Measuring and Managing net funding Requirements:

Flow Approach

-Measuring and managing net funding requirements.
-Managing Market Access
-Contingency Planning

Flow method is the basic approach followed by Jordanian Banks. It is called as gap method of measuring and managing liquidity.

It requires the preparation of structural liquidity gap report.

In this method net funding requirement is calculated on the basis of residual maturities of assets & liabilities.

These residual maturities represent net cash flows ie. difference between cash outflow & cash inflow in future time buckets

- These calculations are based on the past behaviour pattern of assets and liabilities as well as off balance sheet exposures.

- Cumulative gap is calculated at various time buckets. In case gap is negative bank has to manage the shortfall.

- The analysis of net funding requirements involves the construction of a maturity ladder and the calculation of a cumulative net excess or deficit of funds at selected maturity dates.

Measurement of Interest Rate Risk

- **Gap Analysis-** Simple maturity/re-pricing Schedules can be used to generate simple indicators of interest rate risk sensitivity of both earnings and economic value to changing interest rates.

- If a negative gap occurs (RSA<RSL) in given time band, an increase in market interest rates could cause a decline in NII.

- conversely, a positive gap (RSA>RSL) in a given time band, an decrease in market interest rates could cause a decline in NII.

Measurement of Interest Rate Risk

- **Duration Analysis:** Duration is a measure of the percentage change in the economic value of a position that occur given a small change in level of interest rate.

BIS Approach:

- Maturity ladder/Scenario Analysis:
  - For each maturity, assess all cash inflows versus outflows
  - Daily and cumulative net funding requirements can be determined in this manner
  - Must also evaluate “what if” scenarios in this framework

Liquidity Planning

- Important to know which types of depositors are likely to withdraw first in a crisis.
- Composition of the depositor base will affect the severity of funding shortfalls.
- Allow for seasonal effects.
- Clear managerial responsibilities.

Questions for asset-liability management committee (ALCO)

- There are eight key should be able to answered relative to current liquidity and liquidity risk–management process:

1. How much liquidity (operational, reserve and contingency) do we have?

2. How accessible is it and what are the relative costs?

3. How much operational liquidity may we need short term and longer term?

4. If market or economic conditions change, how could our liquidity needs and cash availability change?

5. What crisis or events could markedly affect our operational needs and slow down our access to reserves and/or contingency sources?

6. Do we have a sufficient early warning system that could prompt actions prior to a problem?

7. What actions would we take in the event of a liquidity crisis, and how long could we sustain operations?

8. Do we have adequate processes and controls in place that will ensure action plans will be executed successfully?

- If you or your management team has difficulty answering any of these questions, your liquidity and liquidity risk–management process may be in need of a makeover.

Six ways to strengthen your liquidity risk–management process.

- Managing liquidity risk is becoming more challenging as balance sheets grow in complexity.

- Here are six steps you can take to strengthen your liquidity and liquidity risk–management process.

Step 1: Determine How Much Liquidity You Have

- A definition of liquidity which we find works well is “the ability to raise cash quickly (within 30 days) with minimal principal loss and at a reasonable cost.”

Step 2: Estimate How Much Liquidity You Need

- Once you have established your current liquidity position and can quantify your institution's capacity to fund planned growth or potential deposit runoff, It is important to understand how future changes in your balance sheet could affect your liquidity position.

- A projection of sources and uses would be an appropriate tool in this case.

Step 3: Establish an Early Warning System

- Once you know your baseline liquidity position, it is important to define a system of key warning signals or risk indicators (triggers) that can alert management to an increased state of liquidity pressure.

- For example, an institution that actively relies upon securitization and sales activities as a primary source of funding will want to establish a measure related to that practice.

- A bank that actively uses brokered funding will want a measure related to that activity.

Step 4: Stress-Test Your Funding Needs and Availability

- Most institutions are accustomed to stress-testing analyses in the context of earnings- and value-at risk through their interest rate risk–management practices.

Step 5: Outline Management's Responses

- Once the liquidity events are identified, management needs to outline its expected responses for each event.

- For larger organizations, establishing a liquidity crisis team that meets and reports periodically to ALCO and the board may be beneficial.

Step 6: Document Your Process and Periodically Test Liquidity Sources

- All this effort is well and good but if it is poorly documented and not periodically tested, all of your work could be for nothing. Take the time to adequately document your liquidity risk–management process.

- As part of this documentation, include a complete description of what you do in terms of liquidity monitoring and management process, your liquidity management philosophy and why your institution has selected (or excluded) specific risk measures and key risk indicators.

Successfully Manage Liquidity Risk

- Institutions that are most successful in managing liquidity and liquidity risk will do the following:

1. Maintain an appropriately detailed measuring and monitoring process that includes a comprehensive collateral inventory management process, accurate sources/uses forecasts and alternative funding source diversity.

2.Implement a liquidity stress-testing process that can quantify the bank's ability to withstand moderate, significant and severe liquidity events.

3. Develop and monitor an early warning system that can detect issues before they become problems.

4.Document and maintain a liquidity contingency/action plan that can be relied upon in the event of various liquidity events or crises.

- It is important to recognize that one size does not fit all and that the success of a liquidity risk management process is a function of not only its design but also the people involved in its management and execution.