

Section II

ASSET & LIABILITY RISK

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INTRODUCTION

Asset Liability Management (ALM) is a key financial and risk management discipline. As one of the core risk areas identified by the Bangladesh Bank, ALM requires senior management responsibility in order to control both inherent and acquired risks in the balance sheet and in day-to-day operations.

ALM is a balancing act, involving the continuous rearrangement of the two sides of the balance sheet to obtain reasonable returns - while providing adequate capital, liquidity and responsiveness to both internal and external factors - to attain the Bank's objectives consistent with prudential limits and risks. These risks are categorized into financial, credit, liquidity, interest rate (or pricing), currency, business and operations. In short, it involves planning, directing and controlling the sources and uses of the Bank's funds.

Within this context, risk is defined as the variability of possible returns (measured in terms of changes in both earnings and capital value) that can be expected to be achieved in the future. Thus, the entire effort to grow future earnings and capital value-while controlling the factors of uncertainty (variability)-requires risk management processes and risk measurement systems.

This section of the Bank's risk management policy discusses the significant risks related to the balance sheet, and prescribes a comprehensive ALM risk management policy framework that is established to allow management to inform business strategy and guide day-to-day operations. In addition, core ALM topics and a glossary of terms have been incorporated in the appendices for further reading and training purposes.

Finally, due to the evolving nature of ALM practices and the attendant regulation that follows the introduction of new financial instruments and transactions, this manual requires updating from time to time.

This Manual is the exclusive property of the Bank. Accordingly, its circulation and use is strictly limited to authorized personnel in the course of bank-related operations and administration.

1. Mission Statement and Performance Objectives

Mission Statement

The Bank's growth and profit objectives can only be attained through prudent utilization of its balance sheet resources. Accordingly, the Bank through its senior management shall abide by the best practices of planning how to mobilize and allocate its resources in a manner that will allow it to offer competitive products and services while maintaining a risk/reward profile that creates shareholder value. To enable the ALM function to achieve these objectives, it shall rely on a reliable management information system as well as responsible oversight and timely intervention as required.

Operational and Performance Objectives

- *Adequate Capital and Returns*

The Bank will define its business directions and operational risk appetite on the basis of adequate capital at all times, with the objective of complying with Bangladesh Bank requirements and maintaining safety in its operations. It will provide returns on deployed capital at a level equal to or better than industry average.

- *Adequate Liquidity*

In order to meet its payment obligations and statutory reserves, the Bank shall maintain sufficient liquidity at all times. As a prudent measure, it shall review developments in the broader economic and regulatory environment for signs of volatility and maintain contingency plans to meet sudden adverse developments requiring temporarily higher levels of liquid assets.

- *Pricing*

The Bank shall constantly monitor its rate setting policies in order to maintain its desired yield on assets, while maintaining competitiveness and mitigating potential volatility in the financial markets.

- *Risk Management*

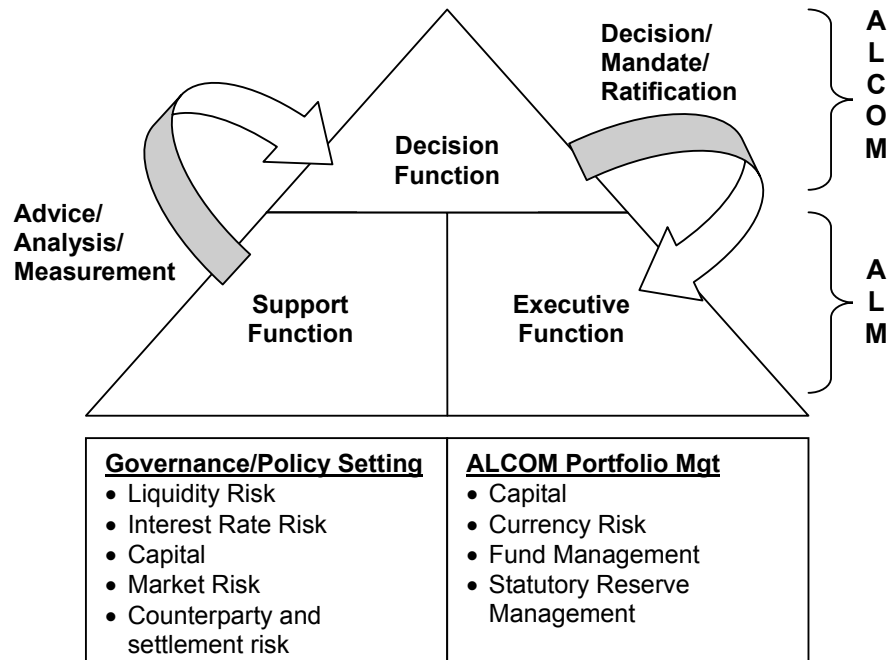
The ALM function will provide the policy directions for a robust and resilient balance sheet structure based on a continuing, reliable assessment of economic and market factors. In doing so, the Bank will be able to:

- a) ensure dependability and timeliness of critical information required to direct its policies and day-to-day operations;
- b) structure its maturity and pricing schedules optimally;
- c) meet unforeseen market and economic development with the least disruption;
- d) properly hedge financial risks; and
- e) comply with regulatory requirements

2. KEY ALM CONCEPTS

2.1 ALM Framework

The following framework provides an overview of assets & liabilities management, showing the interplay of the various functional components:



The Asset-Liability Management Committee (ALCOM), at the apex of the diagram, guides the ALM process within the parameters set forth by the Board. As such, its outlook is holistic and long-term - i.e., strategic - and its planning role is geared to achieving an optimum equilibrium between balance sheet stability and yields. On the other hand, day-to-day treasury operations revolve around tactical/short-term actions (mainly investments and trading) within the risk parameters dictated by the ALCOM.

The ALM process is discussed in Section 3.

2.2 Asset-Liability Management (ALM) Risks

Asset and liability management risks may be categorized into 3 levels:

- risks that arise from the composition and dynamics of the balance sheet, specifically in their impact on liquidity, earnings and, ultimately, adequacy of capital;
- risks that arise from the actual management process, specifically with regard to: the roles and responsibilities of senior management; the timely availability and quality of operational information; and the ability to interpret information, plan appropriately, and to execute those plans; and
- risks that arise from day-to-day treasury operations, specifically in front-office investment and trading activities, middle-office monitoring and in back-office settlements and recording.

The policies to mitigate these are discussed in Sections 3 (ALM Structure & Process) and 4 below and in Appendices 1 and 2.

3. ALM Structure & Process

3.1 The Role of the Board of Directors

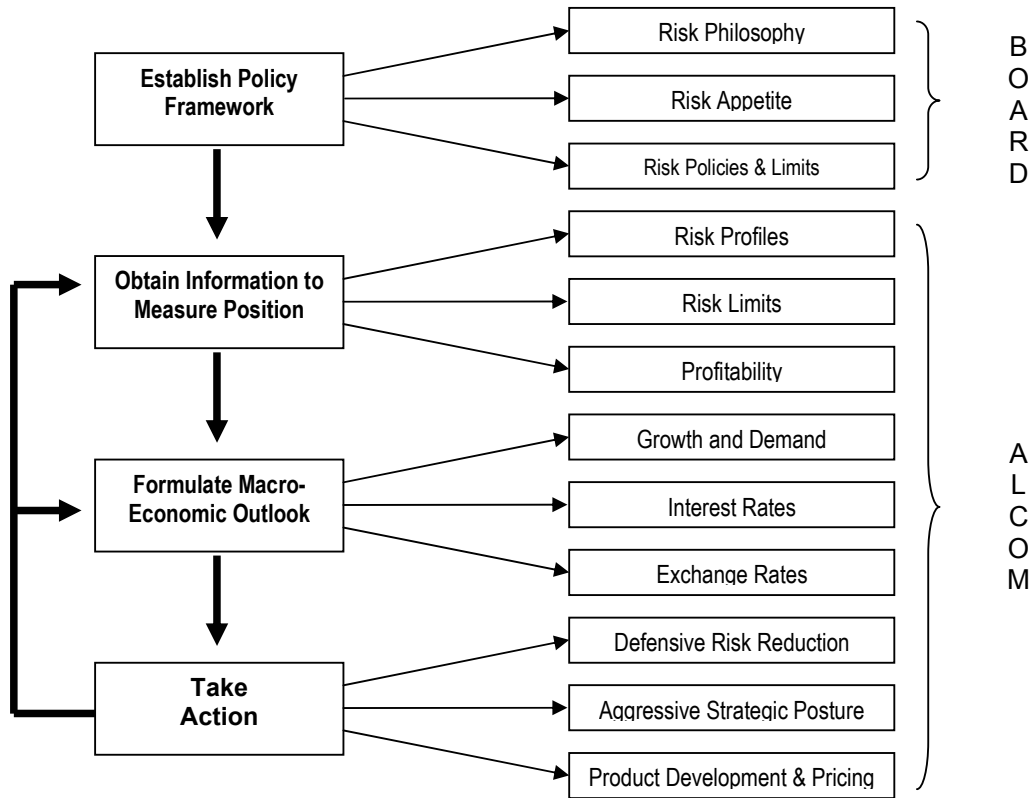
The Board of Directors has overall responsibility and oversight of balance sheet strategy and its implementation. This entails a thorough understanding of the size and type of risks that the Bank undertakes in order to fulfill its mission objectives. The Board should establish the policy framework that prescribes the appropriate environment for risk taking activities, approve the policies and risk limits/tolerances that the Bank must adhere to, and ensure that the means to control these risks are in place and working effectively.

3.2 The Role of the ALCOM

The Assets and Liability Management Committee (ALCOM), on the other hand, is charged with the following day-to-day responsibilities:

- 3.1.1 Ensure that, at all times, the Bank maintains adequate liquidity, sufficient capital and appropriate funding to meet all business requirements and comply with all regulatory requirements, under normal and volatile situations;
- 3.1.2 Build a stable funding structure by managing the long-term profiles of the Bank's assets and liability maturities;
- 3.1.3 Manage the balance sheet and ensure that business strategies are in accordance with the fundamental principles of adequate liquidity and capital as well as a diversified funding base;
- 3.1.4 Diversify the funding of the bank by source, maturity, instrument (which includes saleable asset instruments), and currency;
- 3.1.5 Establish asset/liability pricing policies consistent with the strategies for the balance sheet;
- 3.1.6 Establish operating policy on all issues that affect capital, funding and liquidity; and
- 3.1.7 Ensure that the Bank's Treasury activity employs the necessary skills and has the support to effectively carry out its risk management responsibilities over working capital and liquidity, interest rates and foreign exchange exposures.

The entire process, and the responsibilities of the Board and ALCOM, is expressed in the diagram below:



3.3 ALM Structure

In October 2005, the Board approved the establishment of the Bank's Asset-Liability Management Committee (ALCOM), as follows:

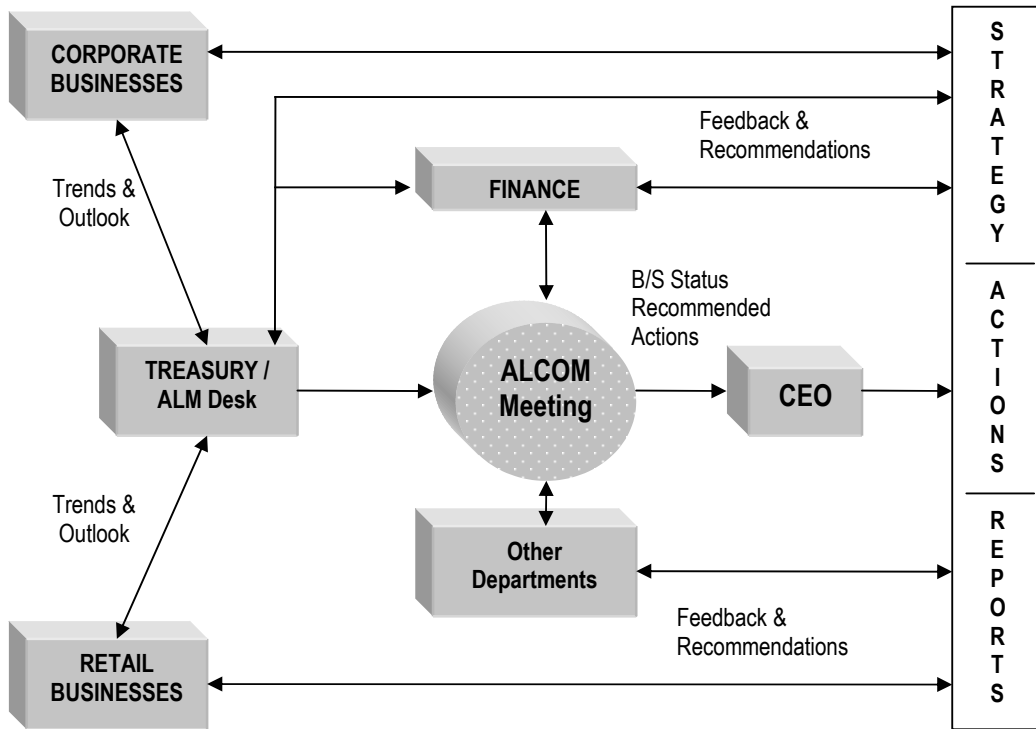
- Chairperson/Convenor - Managing Director & CEO
- Vice Chairperson - Deputy Managing Director
- Members:
 - GM/Head of Credit
 - GM/Head of Operations
 - GM/Head of Recovery
 - GM/Head of International Banking
 - Treasurer/Treasury Officer
 - Circle Heads
 - DGM-Board Division

It should be noted that the nomenclature of positions of the ALCOM members may change with future re-organizations of the Bank. What is important is that the ALCOM membership should be drawn from the key functional areas.

3.4 ALM Process & Information

The foregoing descriptions of the ALM process and the role of the ALCOM indicate the importance of information flows. In brief, balance sheet strategy should be informed by inputs from business groups and finance, and ensuing actions are to be monitored to ensure that risks are avoided (or mitigated) and targets are attained. The ALCOM's role is to ensure the effectiveness of strategy implementation and may only achieve this with proper inputs and business reporting. Ultimately the CEO is responsible for

all strategies and actions, and he/she shall ensure that the Board is properly informed of these. The diagram below graphically illustrates the iterative processes that drive ALCOM activity:



3.4 ALCOM Meetings and Agenda

The ALCOM should meet periodically (at least monthly), or more frequently in the event of volatile situations obtaining in the environment or operationally (refer to [Appendix 1.2.7](#) for details of emergency situations and liquidity contingency planning). Under normal circumstances, the agenda should cover the following:

- 3.4.1 Environment - major events or evolving trends that may impact favorably or otherwise on the Bank's operations (especially its balance sheet, profitability, foreign exchange operations, tax position and compliance with laws and regulation).
- 3.4.2 Current Position - the Bank's financial condition in relation to regulatory requirements (i.e., capital, liquidity, loan-to-deposit ratios,) and performance relative to business plans and budgets (i.e., growth, profitability), focusing on the components of the balance sheet and P&L statements that influence key operational parameters (e.g., deposits, cost of funds, interest margins, administrative costs, capital outlays, etc.). Under optimal conditions the operational figures should be not more than one month old, and should be presented in relation to previous periodic positions (e.g., previous month/quarter, previous year) in order for the body to discern emerging trends.

The Bank's information systems should be developed to ensure timeliness and reliability of all data presented to the ALCOM, with a designated officer/desk which will ensure orderly collation and appropriate analysis of all material presented to the body.

Key Indicators:

- a) Advances-to-Deposits (AD) Ratio: should ideally be between 80-85%, but in no case should be more than 110% (BB guideline);
- b) Medium-Term Funding (MTF) Ratio: should not be lower than 30% and ideally be around 45%;
- c) Wholesale Borrowing (WB) Limit: this is an absolute amount which should ideally not exceed historically highest levels and should be in line with borrowing capacity;
- d) Commitments: this is also an absolute amount which should not exceed 200% of the unused wholesale borrowing capacity of the last 12 calendar months, but could be adjusted upward in the event that natural limitations exist in customers' drawings against committed lines or where the Bank has access to additional funds via realization of surplus statutory holdings;
- e) Maximum Cumulative Outflow (MCO): ideally no single monthly bucket should exceed 20% of the total balance sheet.

- 3.4.3 Action Programs - decisions taken with regard to adverse positions/ trends and operational exceptions (with respect to policies and risk limits), documented in a manner as to readily discern accountability and timetables.
- 3.4.4 Appendices - supporting documents and reports containing the details of all points presented in Section 3.3.2 above. (Refer to Appendices 4.1 through 4.8 of the Manual for the specimen formats to be used by the Bank.)
- 3.4.5 ALCOM Minutes - The BB guidelines have specified that the minutes of the ALCOM proceedings should be in the format shown below, for standardization purposes:

Date	Item No.	Section	Issues and Proposed Actions/Plans	Action by	
				(Initials)	Date
	1	Previous Minutes			
	2	Economy Market			
	3	Liquidity			
	4	Pricing			
	5	Actions			

<u>Attendees:</u>	
ALCOM Meeting ACTION POINTS	Managing Director & CEO Deputy Managing Director GM-Head of Credit GM-Head of Operations GM-Head of International Banking Treasury Officer
	Convenor/Chairman Member Member Member Member Member

3.5 Contingency Plan for Emergencies

The ALCOM should maintain Board-approved contingency plans for handling emergency situations, particularly those impacting on the Bank's liquidity situation. Ideally, such plans should include measures to address unfolding emergency situations at two critical stages, described hereunder:

3.5.1 Impending Crisis (when early alert systems signal a high probability that the Bank's liquid assets will be insufficient to meet funding requirements within one calendar month):

<u>Actions:</u>	<u>Responsibilities:</u>
a) Investigate underlying causes to establish:	<u>Briefing by:</u> Treasury Head
- extent & timing of crisis	<u>Deliberation by:</u> ALCOM
- duration of crisis	
- alternative measures to avert crisis	
b) Alert divisional heads, and initiate administrative actions (e.g., leave cancellations) as appropriate	MD-CEO
c) Review liquid and marketable assets (by maturity) and prepare a liquidation schedule, noting cost implications of pre-terminations, etc.	Treasury Head
d) Curtail new commitments, adjust long/open positions to the minimum, renew/activate unused credit lines &/or apply for new lines as appropriate	MD-CEO Treasury Head
e) Prepare/agree on messages for internal and external parties, and the timing for their release	ALCOM
f) Alert the Board members	MD-CEO

3.5.2 Crisis Situation (when the anticipated adverse event materializes):

<u>Actions:</u>	<u>Responsibilities:</u>
a) Inform the Bangladesh Bank of crisis and proposed remedial actions in place	MD-CEO
b) Brief divisional heads and treasury dealers on activation of action plans to free up or to purchase liquidity	Treasury Head & Divisional Heads
c) Release agreed messages to other external parties as appropriate	MD-CEO
d) Monitor developments, to wit:	
• Repo line/rediscount window with BB	MD-CEO
• Sale/liquidation of assets	Treasury Head
• Level of utilization of credit lines	Divisional Heads
• Deposit withdrawal patterns	
• Early termination of term deposits	
• Recovery of loans, especially NPLs	
• Disbursements of loans and utilization of credit lines	

and maintain open lines of communication with the Board and Bangladesh Bank

4. Guidelines for Treasury Operations

The success of the Bank's assets and liabilities management relies to a large extent on the proper execution of ALCOM directives, particularly in the day-to-day investment and trading operations of the Bank's Treasury. To this end, the Bank's policies and procedures should be developed for the purpose of monitoring and controlling risks in its operations and in the environment.

4.1 Role of Treasury

The Bank's treasury unit (erstwhile Fund Management Division) is responsible for executing the balance sheet strategies outlined by the ALCOM. Its day-to-day activities will involve:

- 4.1.1 Cash management
- 4.1.2 Working capital management
- 4.1.3 Statutory liquidity management
- 4.1.4 Interest rate risk management

Furthermore, an Asset-Liability Management (ALM) Desk within the treasury unit will provide the Treasury Officer with updated inputs concerning:

- Regulatory compliance requirements
- Changes in balance sheet composition and the risks components thereof; and
- Market dynamics (e.g., competition, potential customers, trends in rates)

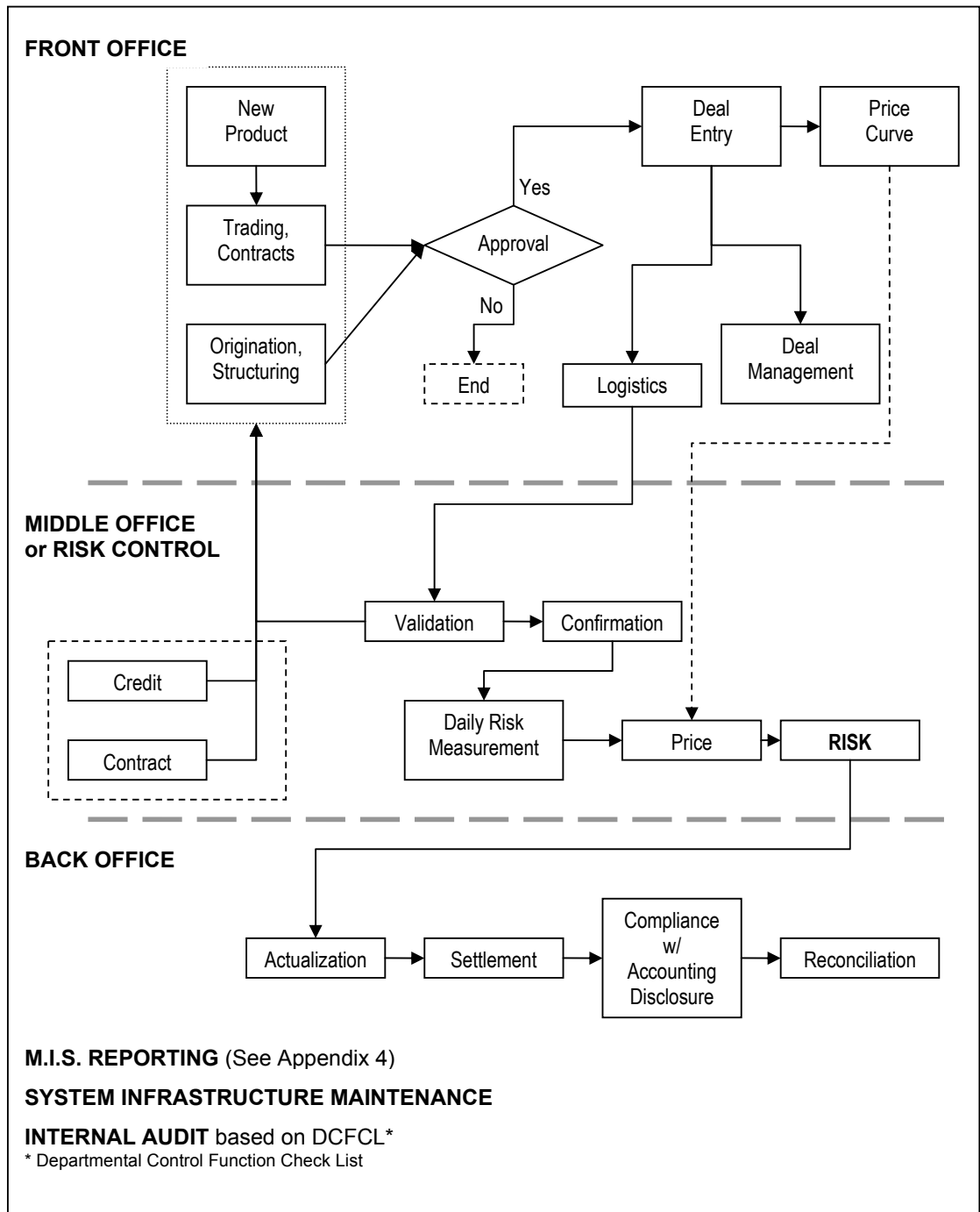
4.2 Segregation of Functions

The Bank shall strictly enforce the segregation of front-office risk-taking activities from middle-office monitoring and back-office settlements, as a matter of operational control over the investment of liquid funds.

4.3 Process Flow

A transaction normally starts with a dealer striking a transaction/deal in the market, maintaining his/her own record for monitoring the exchange position. Within a reasonable time, he/she passes on the detailed information of the deal to the Treasury back office through the middle office. The middle office first checks the deal slip and transfers the same to the back office. The back office, after confirming arrangements with the counterparty, will pass the accounting entries/vouchers, make the settlement, reconcile positions and then inform the Treasury Head of the accurate position through the middle office. The back office runs valuations on a periodic basis and checks the day-to-day treasury activities.

This process, within a segregated functional structure, is shown in the high-level process flow chart below:



Detailed operating procedures for these various functions are described in [Appendix 2](#).

4.4 Operational Risk Policies

4.4.1 Risk Limits

For prudential reasons, the Bank shall impose limits on amounts that may be prudently transacted by front-office traders or with counterparties.

- a) Dealing Limits – these refer to trigger points indicating transaction amounts, positions and/or trading volumes that need to be referred to higher management before further processing or transactions may proceed. These are discussed in Appendix 2.
- b) Counterparty Limits – these refer to the total amount of exposure that the Bank may prudently maintain with other banks or financial institutions (e.g., short- and long-term deposits, placements, etc.). The process for setting these limits are discussed in Appendix 3.

4.4.2 Monitoring of Transactions, Outstanding Positions, and Profitability

The treasury unit, through its **ALM desk**, shall report on all its activities on a periodic basis in accordance with prescribed formats which are shown in Appendix 4. As a corollary function, the ALM Desk shall maintain updated records of movements in the balance sheet as these are impacted upon by treasury transactions, and report the same to the ALCOM through the Managing Director-CEO.

4.4.3 After-Hours Dealing

After-hours dealing refers to transactions initiated when the dealer's own trading room is scheduled to be closed. Locally, **business hours are from 9.00 A.M. to 5:00 P.M.** This will require specific authorization from the ALCOM to conduct any after-hours dealing.

4.4.4 Off-Premises Dealings

A transaction done by a dealer who is not physically located in the dealing premises (irrespective of the time of day) is referred to as an “off- premises” deal. This type of deal needs to be treated separately from a deal done within the dealing room, as it utilizes communication tools that are not as special as those of the dealing room. For example, an off-premises deal done on the phone is generally not recorded and thus there is no record in case of any future dispute. The back office is not in a position to take immediate action (confirmation, settlement, etc.) in case of off-premises deals.

Important Note: The current infrastructure of Agrani Bank does not support this kind of activity. Moreover, this sort of dealing contains a high level risk and should be avoided at all costs. For this reason, the Bank's Management has decided that **such activity should not be encouraged**. Off-premises dealing in the future may only be undertaken upon satisfaction of the following conditions:

- a) They must be authorized by the Board of Directors of the Bank; and
- b) An extensive and comprehensive procedure is implemented to support these kinds of activities, incorporating:
 - laid down procedures of accounting on a case-by-case basis;
 - management designation procedures to authorize, in writing, particular dealer(s) with the authority for such transactions; and
 - the availability of necessary tools/facilities are available for recording

4.4.5 Mandatory leave

Dealing is very sensitive and it involves different types of risk due to adverse or volatile market movements. There is also risk of mistakes not being unearthed. Thus, all dealers are required to be away from their desks by turn at a stretch for some days during a given year. During this period, the dealer's functions are to be run by other dealers and he is not expected to be in contact with his treasury colleagues. This type of leave is called a "Mandatory Leave".

Management has decided to allow a **leave period of 15 days in a year for each dealer**. Dealers are at liberty to avail of such leave at any time, upon sanctioning by proper authority and adjustment of duty schedules; however, management reserves the right to specify the mandatory leave roster in the interest of ensuring appropriate controls on trading activities.

4.5 Internal Audit

In view of the complexities of both trading and foreign exchange businesses, internal audit is a significant activity that serves to review and check the adequacy of the key control issues. This function should include:

- Checking for adherence to the various risk exposure limits;
- Checking for compliance with internal & regulatory requirements;
- Adequacy of statutory management

For additional safety, a concurrent audit process can be put in place by the Treasury's mid- and back-offices to ensure the day-to-day functioning is conducted in a safe manner. Each office is expected to develop and maintain a **departmental function control checklist (DCFCL)** as a guide for ensuring that all control activities are being effectively carried out.

APPENDICES

1 Balance Sheet Management

- 1.1 Capital: Rationale, Regulatory Requirements, Adequacy Measurements, Returns
- 1.2 Liquidity: Concept, Coverage & Drivers, Regulatory Requirements, Risk Measurement, Management Strategies
- 1.3 Interest Rates: Types of Risk, Risk Management, Analytical Tools, Stress Testing
- 1.4 Transfer Pricing: Concept, Performance Management, Commercial & Financial Margins

2 Functional Organization & Procedural Guidelines

3 Credit Scoring Methodology for Setting Counterparty Limits

4 Forms & Formats

- 3.1 Fund Position
- 3.2 Statement of Call Loans to BFI's and NBFIs
- 3.3 Statement of Call Loan Borrowings from Other Banks
- 3.4 Term Placements
- 3.5 Cost of Funds & Net Interest Margin
- 3.6 Liquidity Statement
- 3.7 Month-wise Inflow (Outflow) of Foreign Currency
- 3.8 Treasury Performance Analysis

5 Glossary of Financial Terms

Balance Sheet Management

1.1. Capital Management

Regulators have always been interested in the capital ratios of the financial institutions and have been implementing explicit capital adequacy regulations since the late 1980's. The purpose of regulatory capital is to enforce minimum capital requirements.

1.1.1 Rationale for Bank Capital

Banks require capital to:

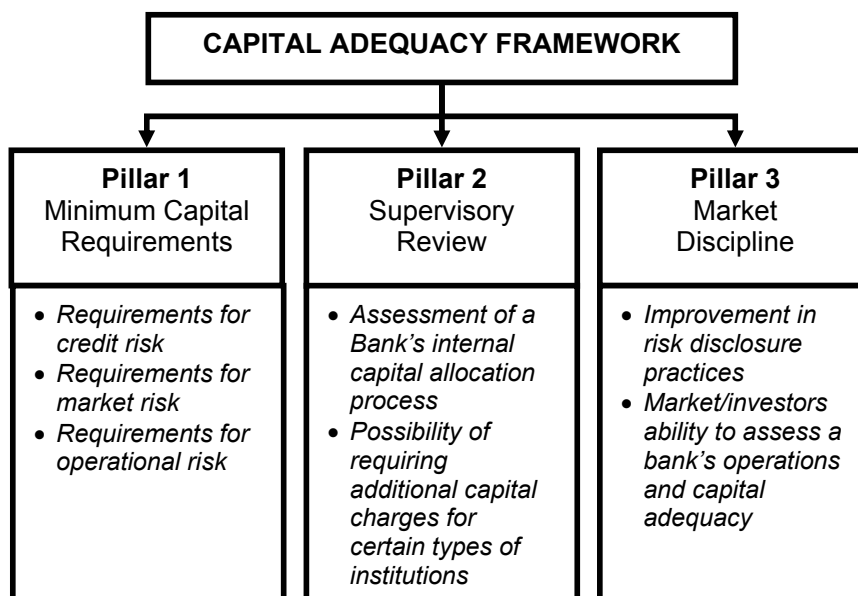
- Absorb unanticipated losses with sufficient margin of safety to maintain public confidence in the Bank's ability to operate as an on-going concern
- Protect uninsured depositors and other creditors in the event of liquidation of the Bank
- Assure stakeholders of the Bank's solvency
- Comply with the requirements of regulators, and
- Provide for premises, equipment and other non-earning assets necessary for Bank operations

The need to adopt the best international practices in this area is underscored by the Basel Committee on Banking Supervision of the Bank for International Settlements (BIS). In two Accords^{1/}, emphasis has been made to maintain capital commensurate with risk exposures.

(Note: In the New Capital Accord, both operational and market risks are new areas to be considered in computing the CAR.)

- ^{1/} Basel-1: International Capital Standards (1988)
Basel-II: New Basel Accord (1999)

The principal concerns of Basel-II are summarized in the figure below:

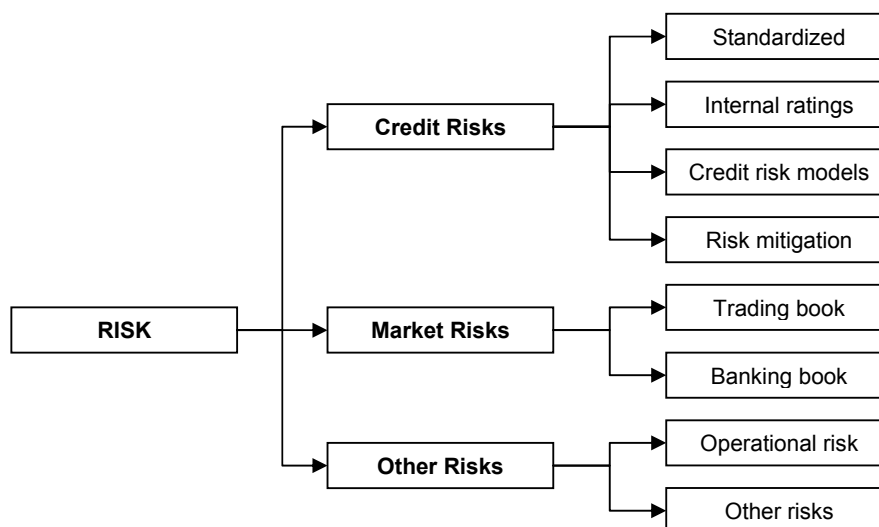


1.1.2 Capital Adequacy Measurement

The principal ratios for measuring capital adequacy are:

- Capital-to-Risk Weighted Assets (BIS ratio) ^{1/}
- Capital-to-Total Assets (CAR)
- Total Assets-to-Equity (Leverage)
- Liabilities-to-Capital (Gearing)

^{1/} Under Pillar 1 of the B.I.S. Capital Adequacy Framework, banks are encouraged to adopt a risk-sensitive approach to measuring minimum capital, taking into account the following:



Currently, the Bangladesh Bank requires the scheduled banks to maintain core capital of 4.5% and total capital of 9% of risk-weighted assets, respectively.

This is computed in accordance **with BRPD Circular # 11 dated 24 November, 2002**, from which relevant excerpts are cited below:

A. Definition of Capital

For the purpose of supervision, capital will be categorized into two tiers:

Tier 1 – Core capital comprising the highest quality capital elements, namely:

- a. Paid-up capital
- b. Non-repayable share premium account
- c. Statutory reserve
- d. General reserve
- e. Retained earnings
- f. Minority interest in subsidiaries
- g. Non-cumulative irredeemable preference shares
- h. Dividend equalization account

Tier 2 – Supplementary capital, which represents other elements which fall short of some of the characteristics of core capital but contribute to the overall strength of a bank, namely:

- a. General provision (1% of unclassified loans)
- b. Assets revaluation reserves
- c. All other preference shares
- d. Perpetual subordinated debt
- e. Exchange equalization account.

Note: Reserves created by periodic revaluation of banks' assets can be included as a component of Tier-2 capital only if the revaluation is formally conducted by professionally qualified valuation firms. Such reserves will be eligible up to 50% for the treatment as Supplementary Capital provided that the rationale of the re-valued amount is duly certified by the external auditors of the bank. Such revaluation may be done once in a year.

B. Minimum Capital Standards

Each bank will maintain a ratio of **capital to risk-weighted assets of not less than 9% with at least 4.5% in core capital**, and this requirement will have to be achieved by 30 June 2003. However, the minimum capital requirements of Tk. 100 crore for locally incorporated banks and an amount equivalent of US\$ 17 million for banks incorporated outside Bangladesh will remain unchanged until further instructions.

C. Risk-Weighted Assets

Both balance sheet assets and off-balance sheet exposures are to be weighted according to their relative risk. Presently there are 4 categories of risk weights - 0, 20, 50 and 100 percent. For the purpose of assessing capital adequacy, weights for particular items are given in Annexure 1.

Off-balance sheet transactions are to be converted into balance sheet equivalents for the purpose of assessing the capital adequacy before assigning a risk weight as shown in Annexure 1.

Four categories of credit equivalents of 0, 20, 50 and 100 percent will apply. Details are shown in Annexure 2.

D. Implementation

Banks are advised to assess their capital position on half-yearly basis, i.e., on 30 June and 31 December each year and report the same to the Department of Banking Operation and Development (DBOD) of Bangladesh Bank within one month from the end of respective half-year.

**Risk Weights Applicable for Balance Sheet Items
(Annexure 1)**

ITEMS	Risk Weights (%)
1. Cash in hand and with banks (except banks abroad)	
a) Bangladesh Bank notes	0
b) Government notes and coins	0
c) Balances with Bangladesh Bank	0
d) Balances with Sonali Bank as agent of Bangladesh Bank	0
e) Balances with Deposit Money Banks including Sonali Bank	0
f) Balances with other financial institutions (OFIs) – Public	0
g) Balances with other financial institutions (OFIs) – Private	20
2. Money at call and short notice	
a) Deposit money banks (DMB)	0
b) Other financial institutions (OFIs) – Public	0
c) Other financial institutions (OFIs) – Private	20
3. Foreign currency balances held	
a) Foreign currency notes in hand	0
b) Balances with banks abroad	0
c) Foreign currency clearing account balances with Bangladesh Bank	0
d) Bilateral trade credits	50
e) Wage Earners' (WES) accounts	0
4. Export and other foreign bills	
a) Export bills	50
b) Other foreign bills	50
5. Foreign investment	
a) Organization of Economic Cooperation and Development (OECD) countries	20
b) Other countries	50
6. Import and inland bills	
a) Government	
1) Ministry of Food	0
2) President's Office, Prime Minister's Office, Parliament, Judiciary and Non-food Ministries	0
3) Autonomous & Semi-autonomous Bodies	20
b) Other financial institutions	
1) Other financial institutions (OFIs) – Public	0
2) Other financial institutions (OFIs) – Private	20

ITEMS	Risk Weights (%)
c) Major non-financial public enterprises	50
d) Other non-financial public enterprises	50
e) Local authorities	20
f) Private sector	100
g) Deposit money banks	20
7. Advances	
a) Government	
1) Ministry of Food	0
2) President's Office, Prime Minister's Office, Parliament, Judiciary and Non-food Ministries	0
3) Autonomous & Semi-autonomous Bodies	20
b) Other financial institutions	
1) Other financial institutions (OFIs) – Public	20
2) Other financial institutions (OFIs) – Private	50
c) Major non-financial public enterprises	50
d) Other non-financial public enterprises	50
e) Local authorities	20
f) Private sector	100
g) Deposit money banks	20
8. Investment (as per book value)	
a) President's Office, Prime Minister's Office, Parliament, Judiciary and Non-food Ministries	
1) Treasury bills (28 days, 91 days, etc.)	0
2) Treasury bills (long-term)	0
3) Government savings certificate (Bangladesh Sanchaya Patra, 3 month's profit basis Sanchaya Patra, etc.)	0
4) Prize bonds/income tax bonds	0
5) Other securities of government	0
b) Autonomous & Semi-autonomous bodies	20
c) Other financial institutions	
1) Other financial institutions (OFIs) – Public	20
2) Other financial institutions (OFIs) – Private	50
d) Major non-financial public enterprises	50
e) Other non-financial public enterprises	50
f) Local authorities	20
g) Private sector	100
h) Deposit money banks	20
i) Negotiable certificates of deposits	20
9. Head office and inter-branches adjustments	0

ITEMS	Risk Weights (%)
10. Other assets	
a) Contingent assets as per contra (off-balance sheet items)	
1) Letters of credit & letter of guarantee issued on account of government	0
2) Deposit money banks	20
3) Others	50
b) Fixed Assets	50
c) Valuation adjustments	50
d) Expenditure account	0
e) Other	100

Notes:

1. Claims fully secured by cash/quasi-cash, which is lodged with the bank itself will have zero weight. All claims should be calculated net of such securities.
2. Claims on borrowers other than Government or bank, which are guaranteed by the Government or a bank will carry the weight appropriate for the guarantor.
3. Netting may also be done in respect of assets where provisions for depreciation or for bad and doubtful debts have been made.

**Credit Conversion Factors for Selected
Off-Balance Sheet Items
(Annexure 2)**

Credit Conversion Instruments	Factors (%)
1. Direct credit substitutes, including financial guarantees, standby letters of credit serving as guarantees and bills endorsed under endorsement lines (which are not accepted by or have the prior endorsement of another bank)	- 100
2. Sale and repurchase agreements, forward asset purchases, and placement of forward deposits	- 100
3. Transaction related contingent items including performance bonds, bid bonds, warranties and stand-by letters of credit related to a particular transaction	- 50
4. All note issuance facilities and revolving underwriting facilities; other commitments (e.g., formal standby facilities) with a residual maturity exceeding one year	- 50
5. Short-term self-liquidating trade related contingencies (e.g., documentary letters of credit and other trade financing transactions)	- 20
6. Commitments with a residual maturity not exceeding one year, or which can be cancelled or revoked at any time (e.g., un-drawn overdraft and credit card facilities)	- 0

1.2 **RAROC**

Risk-adjusted return on capital (or RAROC) is a method to measure not only performance and profitability, but also to determine the optimum level of equity capital allocated to support business units engaged in risk-based activities such as lending and trading. The formula for computing this is:

$$\frac{\text{Revenues} - \text{Expenses} - \text{Expected Losses} + \text{Income from Capital}}{\text{Capital}}$$

Where, expected loss = mean of the loss distribution associated with some activity (e.g., lending) or from operational risk

1.2 Liquidity Management

1.2.1 Concept, Coverage and Drivers

- a) Liquidity is the ability of a bank to fund increases in assets and meet obligations in all currencies as they come due, and is extremely crucial to its ongoing viability. Liquidity risk is therefore defined as the risk that the bank will be unable to make a timely payment on any of its financial obligations to customers or counterparties in any currency.
- b) A key activity of the bank is the creation of liquidity. Most activities depend directly or indirectly on its ability to provide liquidity to customers. *Almost every financial transaction or commitment has implications for a bank's liquidity; therefore the bank is particularly vulnerable to liquidity problems, both of an institution-specific nature and those which affect markets as a whole.*

1.2.2 Liquidity Management

Liquidity management is among the most important activities conducted within the bank. Sound liquidity management can reduce the probability of serious problems. The importance of liquidity transcends even an individual bank, since a liquidity short-fall at a single institution can have system-wide repercussions.

Consistent with managing other types of risk, **sound liquidity risk management** involves setting a strategy for the bank, ensuring effective board and senior management oversight, as well as operating under a sound process for measuring, monitoring and controlling liquidity risk. The analysis of liquidity requires that the bank not only measure its liquidity position on an ongoing basis but also to examine how funding requirements are likely to evolve under various scenarios, including adverse conditions.

The formality and sophistication of the process used to manage liquidity should evolve according to the nature and complexity of the bank's activities. A strong liquidity **management system** in particular is characterized by the following elements:

- i. good management information systems;
- ii. effective analysis of net funding requirements under alternative scenarios,
- iii. diversification of funding sources; and
- iv. contingency planning

1.2.3 Sub-Types of Liquidity Risk

Liquidity risk can be classified into two sub-types:

- i. Funding Liquidity Risk occurs from the mismatch of asset, liability, exchange contract and contingent commitment maturities; and
- ii. Trading Liquidity Risk refers to the inability to unwind positions created from markets, exchanges and counterparties due to temporary or permanent factors.

1.2.4 Liquidity Risk Measurement

In its simplest form, liquidity measurement involves assessing all of the Bank's cash inflows against its outflows to identify the potential for any net shortfalls going forward. This calculation includes funding requirements for off-balance sheet commitments. A core measurement tool of liquidity is the Maximum Cumulative Outflow (MCO), which estimates the amount of prospective funding that the Bank will require at pre-specified future dates in normal operating environments. This monetary amount is a measure of the liquidity gap between the maturing liabilities and assets at specified time periods.

The measurement of the Bank's net funding requirements, however also requires qualitative assessments. Some cash flows are easily calculated or predicted, but liquidity managers must also make (and document) assumptions about future liquidity needs, both in the very short-term and over longer time periods.

A significant factor to consider is how the Bank's reputation impacts its ability to access funds readily and reasonably. Liquidity managers must be aware of any information (such as an announcement of a decline in earnings or a downgrading by regulators and credit agencies) that could have an impact on market and public perceptions about the soundness of the institution.

Maximum Cumulative Outflow (MCO) Report

For preparing a liquidity gap report, the sequence of activities that need to be performed is as follows:

- Segregate assets and liabilities into different time buckets based on their remaining maturities;
- Place all assets and liabilities in their appropriate time buckets ;
- Identify the number of time buckets;
- Subtract maturing liabilities from maturing assets in order to determine the liquidity gap, under each bucket ;
- Compute the cumulative liquidity gap.

Shown below is the computation of the liquidity gap statement of a hypothetical Bank:

Universal Bank

	1-30 days	1-3 months	4-6 months	7-12 months	Over 1 year	Total
Assets	500	700	1000	1100	1200	4500
Liabilities	400	550	750	1200	1500	4500
Gap	100	150	250	(100)	(400)	---
Cum.Gap	100	250	500	400	0	---
(% Total Asset)	20%	35%	50%	33%	0%	0%

Prescribed gap limit :

- 3 months cumulative gap: 10%
- 1 years cumulative gap: 20%

The above statement reveals that the actual liquidity gaps (shaded figures) are in excess of the prescribed limits. Instances like these will require notification of the Board and a request to increase the limits accordingly.

During periods of environmental volatility, the buckets may be broken down into more discrete time periods (e.g., weekly) for finer estimates of funding gaps.

1.2.5 Liquidity Risk Management

In liquidity management, the counterpart to the risk approval process for market risk limits is the Funding and Liquidity Plan. At least once annually, the Treasurer shall present the business plan that will include the request for liquidity limits from the ALCOM, for final approval and ratification by the Board of Directors.

To effectively manage liquidity risk, it is imperative to understand the internal and external risk drivers which are discussed below:

a) Factors Responsible for Increase/Decline in Liquidity Risks

The quantum of liquidity in a Bank may be attributed to a number of factors which are enumerated as follows:

Liquidity Risks increase	Liquidity Risks decline
<ul style="list-style-type: none"> • Growth of deposits • Receipt of bills receivable • Issuance of Bank Drafts, TT, MT, 	<ul style="list-style-type: none"> • Payment of deposits • Payment of bills payable • Increase in Loan, Cash Credit, Overdraft, Bill purchased/discounted
<ul style="list-style-type: none"> • Receipt of interest in Cash • Repayment of Loan, Cash Credit, Overdraft, etc. • Investment of Capital 	<ul style="list-style-type: none"> • Acquisition of fixed assets • Payment of salaries and other expenses in cash • Payment of Interest and borrowings
<ul style="list-style-type: none"> • Sale of Investments 	<ul style="list-style-type: none"> • Increase in investments

b) Liquidity Strategy

Liquidity management starts with the formulation and dissemination of a clear liquidity strategy that shall map out the general approach the Bank will have towards liquidity, including various quantitative and qualitative targets. This strategy should address a key Bank goal of protecting its financial strength and its ability to withstand stressful events in the marketplace.

Because of the importance of liquidity, the Board of Directors retains responsibility for approving the liquidity strategy which is recommended by the Asset-Liability Committee (Alcom). The Alcom and the Treasury function subsequently implement this on a day-to-day basis within the approved parameters/limits.

c) Strategies for Liquidity Gap Management

The Bank will determine the best strategy to manage gaps in liquidity that are caused by changes in its balance sheet structure from time to time. A range of options are available from which to choose, and the final one selected at any given time will have to achieve the best balance between cost (or forgone income) on one hand, and the speed with which the transaction can be undertaken.

Available strategies **when liquidity is positive** are the following:

Shrinkage strategy

- *lend funds on longer tenor/term*
- *invest in longer-term securities*

Liability Restructuring Strategy

- *accept short-term deposits*
- *not to renew term deposits*

Asset Restructuring Strategy

- *convert short term securities into long term securities*

In case of **negative liquidity gaps**, the following strategies may be considered:

Growth Strategy

- *borrow long term funds from the market*
- *invest in short term securities*

Liability Restructuring Strategy

- *roll-over of short term deposits offering high interest rate*

Asset Restructuring Strategy

- *sell long term assets*
- *buy short term securities*

Contingency plan

- *arrange credit line from larger Banks.*

1.2.6 Liquidity Instruments

a) Repo (Repurchase Agreement)

Repo is the sale of a security with a commitment by the seller to buy the security back from the purchaser at a specified price and date. The transaction is called Repo from the viewpoint of the seller of the security. Security means Bangladesh Govt. Treasury Bills. In case of Repo with Bangladesh Bank, Banks/Financial Institutions inject Taka into the money market which increases system liquidity.

Every Bank purchases Treasury Bills of different terms for maintenance of SLR. With the additional fund of SLR, Bank purchases Treasury Bills. For urgent need of funds, treasury bills are required to be encashed before maturity. Consequently, Bank will be deprived of the interests on the bills for the maturity period or Bank has to borrow funds from Call market. In this case, Bank may opt to borrow funds to the extent of 95% lien against the face value of treasury bills for a temporary period through REPO, with an undertaking that the Bank will repurchase the treasury bill before its maturity. For the purpose of Repurchase Operation Agreement (REPO) the Bank may offer a bid to the Bangladesh Bank specifying the rate of interest. Bangladesh Bank is open for bid offerings daily **excepting Sunday**. The Bank that offers higher interest rates will be given preference in the REPO agreements. Of late, REPO arrangement can be effected through inter-Bank negotiations. For accounting procedures, SGL (Statutory General Ledger) is maintained with Bangladesh Bank.

Impact of REPOs

- An effective monetary tool for day-to-day liquidity management in the Money Market(MM)
- Smoothens temporary unexpected disturbances in the supply and demand of money in the Money Market
- Short-term liquidity increases in the MM by injecting Taka through the Repo mechanism
- Banks and FI's may meet their short-term demand of Taka by Repo transactions without liquidity or sale of the security.

b) Reverse REPO

Reverse REPO is the purchase of Govt. securities from Bangladesh Bank with a commitment of resale after the agreed tenor. The terms and operational guidelines laid term for REPO mechanism are also applicable in the case of Reverse REPO. It is an effective tool for mopping up and absorbing excess liquidity from the money market.

The minimum tenor of Treasury Bills is 28 days. In case of inflow of funds for a temporary period, the Bank cannot accommodate credit with this fund or cannot purchase treasury bills because the funds cannot be retained for 28 days. Besides, Bank has to wait for Sunday. In that case, the Bank cannot earn profits with this fund. Under Reverse Repo, the Bank can earn through short-term investments with the additional funds beyond CRR. In case of Reverse REPO also, the Bank has to offer a bid to Bangladesh Bank specifying the rate of interest. The Bank offering a lower rate of interest is usually acceptable to Bangladesh Bank. In the same manner as Repo, bids are offered to Bangladesh Bank daily except Sunday and in case of inter-Bank arrangements, negotiation is effected for this purpose.

Impact of Reverse REPOs

- Intended participating institutions are to place excess short-term liquidity with Bangladesh Bank
- Used as a monetary management tool to smoothen and stabilize the Money Market by absorbing excess liquidity

1.2.7 Liquidity Contingency Plan

It is a good practice for the Bank to maintain a liquidity contingency plan to adequately address unforeseen circumstances in its operations and in the environment. This needs to be approved by the ALCOM and reviewed at least annually to take care of changes in the balance composition.

The objectives of the plan would be to:

- ensure that Bank has a liquidity management framework to sufficiently withstand a range of crises (e.g., bank run, system illiquidity, etc.)
- analyze various scenarios and their potential impact on the Bank
- determine liquidity needs in the event of loss of funding sources or large drawings under committed facilities; and
- determine available liquidity from existing assets and/or additional funding capacity

For purposes of initiating the liquidity contingency plan, any one or a combination of the following **trigger points** should prompt the Treasury Officer to request for an emergency meeting of the ALCOM:

- call rates in the money market have exceeded 25% for seven consecutive trading days;
- the Bank's advances-to-deposit (AD) ratio has exceeded 100% for fifteen consecutive calendar days;

- the Bangladesh Bank has declined the Bank's request for REPO rediscounting; and/or
- the inter-bank market does not grant the Bank call facilities or charges premium rates

1.3 Interest Rate Risk Management

Interest rate risk (IRR) may be defined as decline in earning or in the Bank's portfolio value due to interest rate fluctuations. Most of the balance sheet items generate revenues and costs which are indexed to interest rates; since these rates are unstable over time, so are earnings. While assuming IRR risk is a key part of its business activity, taking on excessive IRR can potentially threaten earnings and the Bank's capital base.

1.3.1 Types of interest rate risk

IRR can be roughly decomposed into four categories:

Re-pricing risk

This refers to fluctuations in interest rate levels that have differing impacts on bank assets & liabilities. For example, a portfolio of long-term, fixed-rate loans funded with short-term deposits (i.e., a case of duration mismatch) could significantly decrease in value when rates increase, since the loan payments are fixed and funding costs have increased.

Yield curve risk

This refers to changes in the portfolio values caused by unanticipated shifts in the slope and shape of the yield curve; for example, short-term rates might rise faster than long-term rates, thereby clearly affecting the profitability of funding long-term loans with short-term deposits.

Basis risk

This refers to the imperfect correlation between index rates across different interest rate markets for similar maturities; for example, a bank funding loans whose payments are based on Treasury bills with deposits priced on a different basis is exposed to the risk of unexpected changes in the spread between these two indexes.

Optionality

This refers to risks arising from interest rate options embedded in assets, liabilities and off-balance sheet positions. Such options can be explicitly purchased from established markets for interest rate derivatives or included as terms within a loan contract, such as the prepayment options included in many types of loans and mortgages.

1.3.2 IRR Management

IRR management is one of the key strategic and policy issues for the Bank's management. If, for example, the Bank has more rate-sensitive liabilities than assets, a rise in interest rates would reduce profitability, while a decline in interest rates will raise Bank's profits.

The principal objectives in managing interest rate risk are: to ensure an optimal and stable income stream while controlling risks within tolerable parameters; and to manage the level of the exposure to adverse movements of interest rate in order to limit the potential impact thereof.

- a) Key Indicators
 - net interest income (earning perspective).
 - market value of equity (economic value perspective).
- b) Sources of Interest Rate Risk
 - the regulatory environment
 - government policy related to economic growth indicators
 - the size and sources of interest-bearing assets and liabilities.
 - liquidity risk
 - market and operational risk
 - credit risk

1.3.3 Analytical Tools

The following analytical tools are associated with addressing the interest rate risk issues:

a) Gap Analysis

The sensitivity of Bank profitability to changes in interest rates can be more directly measured using gap analysis, in which the amount of rate-sensitive liabilities is subtracted from rate-sensitive assets. The “gap” is the difference for a given maturity. For example, profit declines with the increase of interest rates and, on the other hand, increases with the decline of these rates.

b) Duration Analysis

Duration analysis is a useful concept because it provides a good approximation of the sensitivity of a security's market value to a change in interest rates over time, where

$$\frac{\% \text{ change in market value}}{\text{of security}} = \frac{\% \text{ change in interest rate}}{\text{x duration in years}}$$

For example, if the average duration of a Bank's assets is 5 years, and the average duration of its liabilities is 3 years, a 5 percentage point increase in interest rates will cause the market value of the its assets to fall by 25% (5% x 5 Years) and the market value of the liabilities to decline by 15% (5% x 3 years). The net result is that the net worth has declined by 10% of the total original assets value. Similarly, 5 percentage point decline in interest rate increases the net worth by 10% of the total asset value.

There are generally two approaches to assess aggregate IRR exposures across various business lines and portfolios – the traditional *earnings approach* and the more challenging economic value approach. Earning approach focuses on how interest rate changes the Bank's overall earnings, which are typically measured as net interest income (i.e., the difference between total interest income and total interest expenses).

This is calculated by the following formula:

$$\frac{\text{Interest Earnings} - \text{Interest Expenses}}{\text{Earning Assets}}$$

The economic value approach takes a broader perspective on IRR management by focusing on how interest rate changes affect total expected net cash flow from all of the Bank's operations. Thus this approach examines expected cash flows from assets minus expected payments on liabilities plus the expected net cash flows from off-balance sheet positions (e.g., fees). This approach is more challenging to conduct since, at a minimum, it requires collecting and aggregating more data; at the same time, however, it provides greater insight into a bank's aggregate IRR exposure.

In addition to aggregate IRR management approaches, there are also more focused measurement techniques used for derivatives and other instruments with more complex risk profiles (e.g., mortgage-backed securities). These techniques explicitly use mathematical models of interest rate dynamics with respect to various index rates and their yield curves.

1.3.4 Stress Testing

The Bank should subject its asset yield plans to various plausible scenarios, in order to discern its sensitivity to volatility or changes in market conditions.

Further readings on the subject are contained in a summary paper issued by the Basel Committee on Banking Supervision (BCBS) regarding the general principles on IRR management, which contain the principles for the adequacy and effectiveness of risk management systems.

1.4 Transfer Pricing

1.4.1 Concept & Objectives

Transfer pricing is a major strategy management tool that addresses a number of management issues:

- to allow the netting of liquidity deficits and excesses within the bank;
- to set the rules for margin calculations;
- to serve as a base for setting target earnings;
- to allow for the commercial reporting on earnings by business units, by market segment or by product line;
- to serve as a base for determining customer prices;
- to permit differentiation of commercial policy across products and markets;
- to allocate the costs of funds to commercial units; and
- to transfer financial, liquidity and interest rate risks from business units upward to ALM, and to draw a clear-cut line between commercial and financial policy, the latter being under the responsibility of ALM

1.4.2 Performance Measurement

Branch performance should be measured through annual profit and loss, or more frequently depending on reporting capabilities. The major component of income is the interest that deposit-raising branches receive from Head Office on funding provided to the rest of the Bank. The major component of expenditure, at branches giving advances, is the interest paid by the branches to Head Office for the funding provided to them.

The Bank's transfer pricing policy would be to provide incentives to operating business units to expand the balance sheet with increasing spread. Lowering of the interest payout on liabilities and increasing the income on assets should be the super-ordinate goal for the transfer pricing policy.

The ancillary objectives of Agrani Bank's Transfer Pricing policy are:

- *Remove interest rate risk from the business units and products*, and leave only the controllable variable in the profitability of the business units.

The lending units (both wholesale & retail) are responsible for the credit risk on the loans disbursed by them. However, they have no control over the cost, i.e. the interest rate at which the funds are raised by the Bank. Similarly the borrowing units (both wholesale & retail) should be responsible only for cost of the money borrowed and not for the rate at which the borrowed funds are deployed.

- *Centralize all interest rate mismatches of the Bank in one unit*

It is most effective to transfer all interest rate mismatches in the Bank into one unit that is most capable of handling the risk. The Treasury Department will be responsible for managing all market risks inherent in the balance sheet.

- *Strategic tool for management.*

The Transfer Pricing also acts as a strategic tool available to ALCOM for directing the flow of funds to various sections of the Bank to ensure utilization of resources in the most efficient and profitable manner thereby

managing risks and adhering to pre- determined financial standards and goals established in the financial plan.

- *Provide consistent guidance in product pricing analyses.*

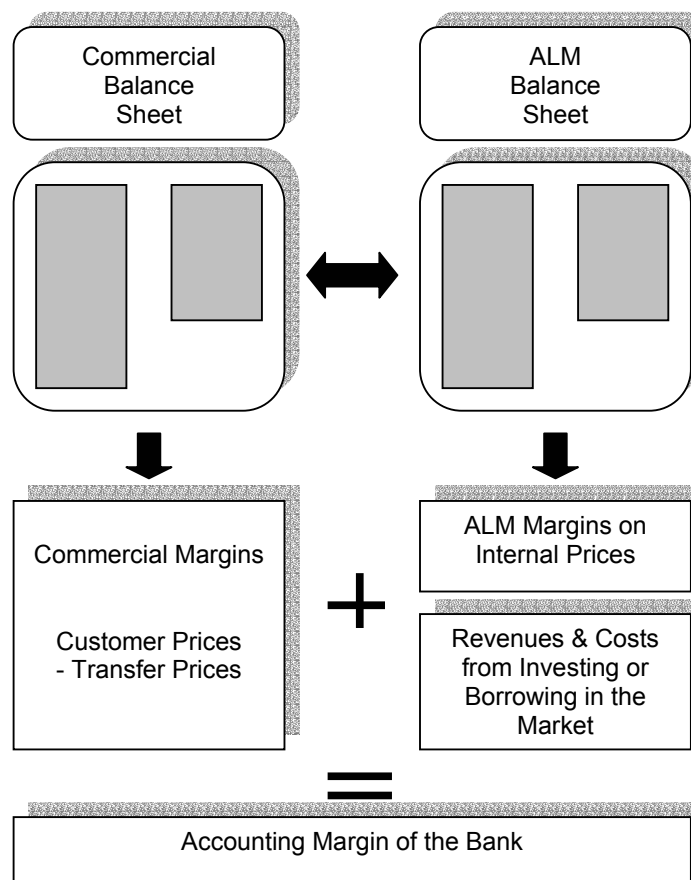
The overall performance of the Bank depends upon market conditions, and these conditions should be reflected in the pricing of its products. Transfer pricing provides guiding rates that can be used for pricing of funds internally in a way so as to instill discipline on loan pricing while simultaneously providing right incentives for deposit gathering.

1.4.3 The Commercial & the Financial Margins

Risk management uses the concept of an internal pool of funds, which is a virtual location where all funds, excesses and deficits, are centralized. The real cash flows are managed by treasury. The “pool” is more analytical than real, and serves to define the transfers of funds and the prices of those transfers. Two methods of pooling are:

- a) *Netting* – in some institutions, the system serves to net the excesses of some business units with the deficits of others; i.e., these are passively netted in a central pool. The pool lends to deficit units and purchases the excesses of others. In the simplest system, a unique price is used for such transfers. Some systems use several pools of funds, for instance by grouping them according to maturity and setting prices by maturity. But the only funds “exchanged” are the net balances of business units.
- b) *Pricing all outstanding balances* – in this model, ALM purchases all the resources and sells all uses of funds of business units, without netting. Thus, all assets and liabilities are exchanged with ALM in a full internal capital market with internal prices. Any global excess or deficit of ALM is then invested or funded in the capital markets. Naturally, this gives ALM powerful leverage on business units. The decision-making process, the customer pricing and the commercial policy of those units become highly dependent upon transfer prices. Transfer pricing in this scenario can also be used as incentives to promote some product lines or some market segments, or to limit the development of others.

Fig. 1 Commercial & ALM Balance Sheets



Any transfer price system separates margins into commercial and financial margins, where the *commercial margin = spread between customer prices and internal prices*, and *ALM margin = results from spreads between internal prices and market prices used to borrow or invest*. This separation offers potential benefits. For business units, it sets the reference prices for customer pricing, according to some target return. For ALM, it provides a way to calculate its earnings.

But these internal margins should also be explicitly reconciled with the accounting margin of the bank's income statement, in order for the system to be credible. In transfer pricing, the banking portfolio is the mirror image of the ALM portfolio since ALM "buys" all liabilities and "sells" assets. The sum of the margins generated by both balance sheets should be equal to the actual interest margin of the bank. In general, the internal margin of business units derived from the transfer price will not be equal to the accounting margin since it does not capture whatever margin is made by ALM.

Calculating Margins (an example)

For purposes of demonstrating the model described above, the following theoretical assumptions are made:

<u>Rates:</u>	
Rates paid to depositors	4%
Internal purchase price of resources	7%
Rates charged to customers	9%
Internal transfer price of funds	7%
Market rate	8%
<u>Commercial balance sheet:</u>	
Assets	100
Liabilities	60
ALM resources	40

The commercial margin is calculated over the balance sheet of the business unit. Revenues are derived from customer prices + any internal purchase of resources by the central unit (ALM). Costs include both the interest paid to customers (depositors) and the cost of internal funds, at the transfer prices charged by ALM.

Margin calculation is conducted over a simplified balance sheet as in the example above. The commercial balance sheet shows a deficit funded by ALM. The average customer price for borrowers is 9% and the average customer rate paid to depositors is 4%. ALM borrows at the 8% current market rate. The transfer price for assets sold by ALM and for resources purchased by ALM is set at 7%.

First, the accounting margin of the bank can be calculated directly as interest revenues minus costs, i.e.

$$\begin{array}{r}
 100 \times 9\% \quad (9.0\%) \\
 - 60 \times 4\% \quad (2.4\%) \\
 - 40 \times 8\% \quad (3.2\%) \\
 = \quad \underline{3.4\%}
 \end{array}$$

With a unique price set at 7%, the commercial margin is $9\% - 7\% = 2\%$ for uses of funds, and $7\% - 4\% = 3\%$ for resources. As the commercial margin is calculated under the convention that all resources are purchased by ALM and all assets are funded by ALM at the unique transfer price (TP) of 7%, the result is therefore

$$\begin{array}{r}
 100 \times 2\% \quad (2.0\%) \\
 +60 \times 3\% \quad (1.8\%) \\
 = \quad \underline{3.8\%}
 \end{array}$$

The difference between the two calculations, i.e., -0.4%, is derived in the ALM calculation, where

$$\begin{array}{r}
 (100 - 60) \times 7\% \quad (2.8\%) \\
 - (100 - 60) \times 8\% \quad (\underline{3.2\%}) \\
 = \quad \underline{-0.4\%}
 \end{array}$$

In other words, ALM's negative margin from the foregoing example indicates it is subsidizing the business unit balance sheet with a transfer price of 7% which is below the market rate of 8%. If the ALM margin is zero (by setting the transfer price to 8%), the entire bank margin becomes equal to the commercial margin.

When transfer prices change, there are two cases to be considered:

- Case 1: Commercial margins are fixed and customer rates adjust; or
- Case 2: Customer rates are fixed (say, due to competitive forces), and only the internal (commercial) rates adjust.

In the first case, the bank's accounting margin changes positively. This is because volumes are constant in spite of the change in customer prices. The table below demonstrates this.

Case 1

Market Rate - 8%

Transfer Price - 8%

	Balances	Margin	Customer Rate	Margin Value
<u>Commercial B/S:</u>				
Assets	100	2%	10%	2.0
Liabilities	60	3%	5%	1.8
Commercial Margin				3.8
<u>ALM B/S:</u>				
Sale of Funds	100	8%		8.0
Purchase of Resources	60	8%		(4.8)
Cost of Funding	40	8%		(3.2)
ALM Margin				0.0
Overall Margin				3.8

In the second case, when the customer rate is set by competition, the net interest margin customer rates are fixed (say, due to competitive forces) and only the internal (commercial) rates adjust.

	Balances	Margin	Customer Rate	Margin Value
<u>Commercial B/S:</u>				
Assets	100	1%	9%	1.0
Liabilities	60	4%	2%	1.4
Commercial Margin				3.4
<u>ALM B/S:</u>				
Sale of Funds	100	8%		8.0
Purchase of Resources	60	8%		(4.8)
Cost of Funding	40	8%		(3.2)
ALM Margin				0.0
Overall Margin				3.4

Differentiated Transfer Prices by Product Line

The calculations above are made with unique values of rates. In practice, the transfer prices are often differentiated according to product lines or market segments.

For example, overall margins can be split into asset margins (which apply to lending activities) and liabilities margins (which apply to deposit collection). These two types of operations are both profitable and should therefore be assigned target profits and compensations. The overall commercial margin is subdivided in this system into a contribution from lending and a contribution from profit collection. For example, where customer rates are 9% for lending and 4% for deposits, the margin is given by the following formula:

$$\begin{aligned}
 \text{Commercial margin} &= [\text{assets (9\% - TP assets)}] \\
 &+ [\text{liabilities (TP liabilities - 4\%)}] \\
 &= [\text{assets x assets contribution (\%)}] \\
 &+ [(\text{resources x resources contribution (5)})]
 \end{aligned}$$

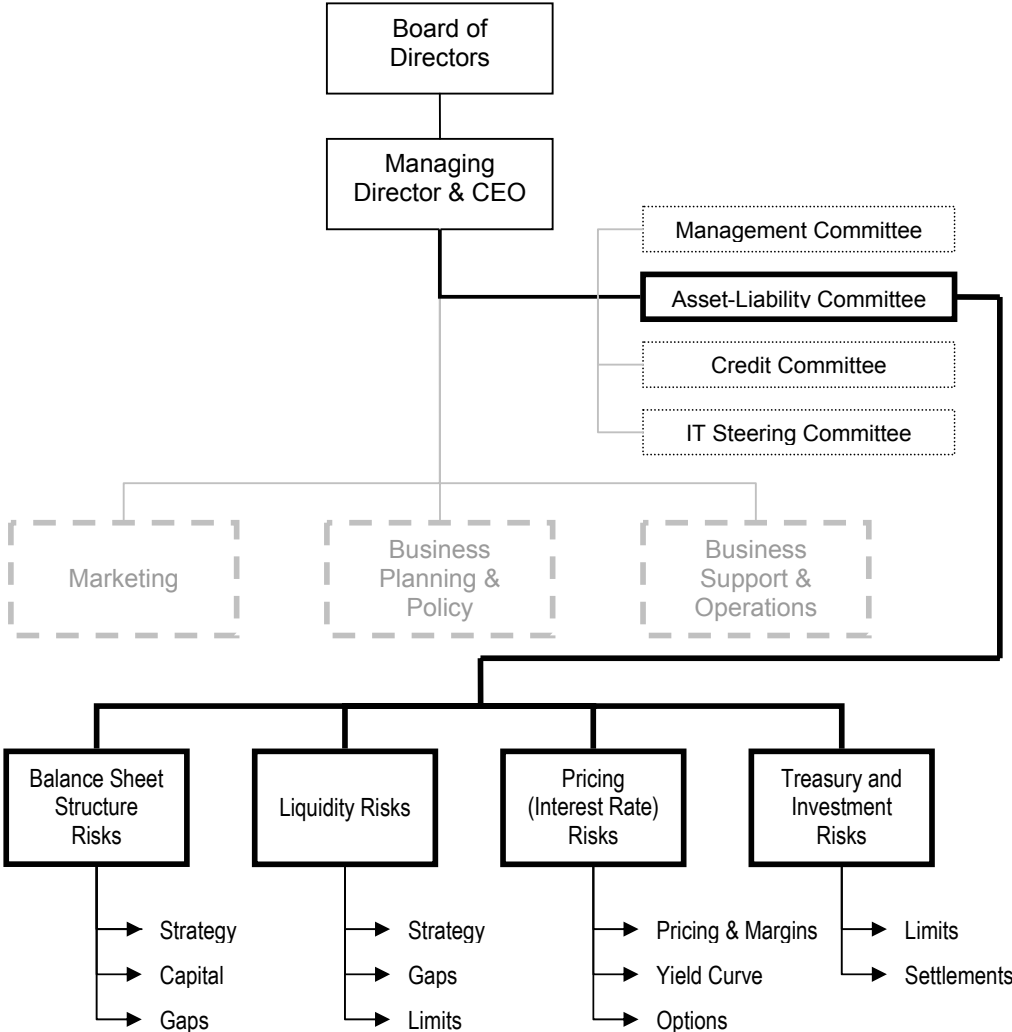
Economic Transfer Prices

Economic transfer prices are internal prices based on market conditions, used by ALM to sell and buy funds from business units. Commercial prices, penalties or incentives are distinct from these economic prices, which serve to:

- set target margins for business units that, in turn, provide the basis to charge customers prices consistent with the target earnings of the bank;
- allow the bank to price risk to customers;
- separate commercial (economic) margins from the financial margins realized by ALM; and
- remove any interest rate risk from the earnings of commercial units

ASSETS & LIABILITY MANAGEMENT

Functional Chart



2.1 Procedure Guidelines for Treasury

2.1.1 Appropriateness of dealing

While transacting with a client, a dealer should be aware of the counterparty's dealing style and product mix, and assess (prior to concluding a deal) whether the customer is dealing in an "appropriate" manner. A dealer should have the responsibility to ensure that the volumes of activity and types of products transacted by a client are appropriate for that particular client and the risks of these transactions are clearly understood by them. Prior to conclusion of any deal, a dealer needs to be assured that the counterparty is authorized to enter into such a transaction (both from counterparty's internal and regulatory perspective).

To address the appropriateness issue, it might be a good idea for the organization to get a standard agreement signed by all its counterparties. Standard agreement format used globally available from like Master Repurchase Agreements, ISDA agreements can be adopted to be used within the Bangladesh jurisdiction for all trades.

2.1.2 Rate appropriateness

This exercise is carried out by the treasury back-office to check for whether all deals have been conducted at market rates. Any deals done at off-market rates must be raised to the respective dealer for a satisfactory explanation and brought to the notice of the chief dealer. In case of a non-acceptable justification provided by the dealer, the Bank may decide to conduct further investigation.

This monitoring process needs to be in place to guard against the application of any inappropriate rates.

Treasury front offices will primarily use the following: Reuters, Bloomberg or Telerate, or any other internationally accepted financial news and information system if authorized by the ALCOM for pricing of its foreign currency (FCY) products; and the local inter-bank market for its local currency (LCY) products. The back office operations should also collect most of the data for their independent verification process from the same sources.

2.1.3 Settlement Risk

All dealing transactions involve an element of risk, the extent of which is dependent the counterparty's inability to pay. This needs to be established before or on the value date. Thus there are two types of settlement risk that all dealers must be made aware of:

a) Pre-settlement risk

This is the risk that a client defaults on its agreement with the counterparty before the settlement day. While the Bank has not yet paid away any funds, it still has to replace the contract at the current market rates, which might have moved against it. In this case, the Bank is exposed to possible adverse price fluctuations between the contract price and the market price on the date of default or final liquidation. The organization's loss would then be the difference between the original contract price and the current market price on the date of default.

b) Settlement risk

The risk on settlement day that one party pays funds or delivers a security to fulfill its side of the contractual agreement, but the other counterparty fails on its side to pay or deliver. This occurs when items of agreed-upon value are not simultaneously exchanged between counterparties, and/or when the Bank's funds are released without knowledge that either the counter-value items or underlying documents evidencing the transaction have actually been received. The risk is that the Bank delivers but does not receive delivery. In this situation 100% of the principal amount is at risk. This risk may be greater than 100% if, in addition, there was an adverse price fluctuation between the contract price and the market price.

2.1.4 Deal Outstanding Limit

It is a good practice to monitor the total deals outstanding in the treasury unit. This exercise should be carried out by the treasury back office to check against any unusual volumes of activity. Good practice dictates that treasury units should have its own volume trend and the treasury back office should monitor whether all activities are being carried out within the usual trend. Management may decide to set a limit for all outstanding transactions at any given point of time. In a fast dealing environment, a dealer may make a mistake and execute a deal with an additional zero that would make the deal amount much higher than intended. Mid-office also monitor the deals outstanding on real-time basis as an independent unit, highlighting for the ALCOM chairman's attention to such deviations for appropriate action.

2.1.5 Daily Treasury Risk report

The treasury back-office is required to summarize all daily positions, particularly the end-of-day positions on a report format for the information of senior management. Such a report should contain information about:

- outstanding open positions against limits;
- the different currency-wise outstanding exchange positions (against limits if applicable);
- the outstanding foreign exchange forward gaps in different tenors;
- tenor-based MCO report;
- interest rate exposures of the balance sheet;
- counterparty credit limits usage; and
- the day's P&L against trigger & stop-loss limits, etc.

2.1.6 Dealing Limits & Procedures

The limit which is allocated to a dealer for investments and trading of funds/securities is based on counterparty exposure limits approved by the ALCOM. These limits are reviewed periodically, but at the very least once a year.

The following are additional guidelines with regard to the dealing room operations.

- a. The exposures to treasury counterparties should be monitored by the back office against the approved exposure limits, and the dealing room supervisor should be notified immediately upon any breach of the limits by the back office-in-charge.
- b. The dealing room will report its trading activities on daily basis, including daily fund position and profit/loss, in accordance with the formats shown in Appendix 4.

- c. All transactions should be conducted through the dealing room by using the dealing room phones.
- d. A voice recorder for the dealing room and telephone lines should be in place.

2.1.7 Account Reconciliation

On daily basis, the back office should reconcile all local currency transactions as they impact on the following:

- a. The Bank's clearing account with the Bangladesh Bank;
- b. The Central Depository Bangladesh Ltd. (CDBL) account, in respect of government securities; and
- c. Daily balancing of investments in approved and unapproved securities, but particularly the former in connection with the Bank's compliance with statutory liquidity reserve limits (SLR).

Detailed particulars of unmatched/outstanding entries are to be recorded and reported to the Treasury Unit head immediately

2.1.8 Mark-to-Market

Mark-to-Market is the process through which all outstanding positions are valued at current market rates to ascertain the probable Profit / (Loss) at a particular point of time. This is to be done in accordance with Bangladesh Bank instructions issued from time to time by the back office.

2.1.9 Model Control Policy

As a good practice, Treasuries use quantitative models in order to:

- Generate valuations used in financial statements; and
- Produce market risk measurements used by independent risk managers in monitoring risk exposures

All financial models that are used in operations must be validated and periodically reviewed (at least annually) by qualified personnel independently of the areas that create or use such models. The models include valuation and risk measurement systems that are developed in-house, certain models on spreadsheets and models within vendor systems.

Model validation is the process through which models are independently and comprehensively evaluated by reviewing underlying assumptions, verifying mathematical formulae, testing the models to verify proper implementation and assessing any weaknesses, and ensuring appropriate application. The validation process of a model reduces the risks associated with using a model that has flaws in the underlying assumptions, errors in its implementation and/or is used inappropriately.

The originator of a model must ensure that it is documented, resides in a control environment, and that any change to an existing model is documented and reported. Treasury units using the financial models, in conjunction with their systems support group, are ultimately responsible for ensuring that all models reside in controlled environments.

A model validation process is not applicable to financial models which only perform simple arithmetic operations. On the other hand, the process must be applied to the following: value-at-risk calculations, earnings-at-risk calculations, interest accrual calculations, and aggregation or consolidation of risk exposures to compare against risk limits.

CREDIT SCORING METHODOLOGY FOR SETTING COUNTERPARTY LIMITS

The issue of counterparty limits arises from the risk that a customer (the counterparty) with whom the Bank has a reciprocal agreement is unable to perform its obligation/s in a financial transaction (for example, a term placement or a deposit). As a good practice, all banking organizations must have appropriate counterparty limits in place for their treasuries. The limit structure depends on each organization's credit risk appetite based on their credit risk policies as well as target market criteria. All such credit risk limits should be set by the organization's credit risk approving unit, which is independent of the treasury dealing function. However, these may be altered according to changing circumstances revealed either in periodic reviews (at least annually) or real-time credit or market risk assessments.

To ensure that a systematic application of the foregoing principles is established for the Bank, the following guidelines were approved by the ALCOM in its meeting on 13 November 2006.

1. For prudential reasons, the ALCOM has set a **maximum single exposure limit to banking as well as non-banking financial institutions** (e.g., finance and leasing companies) at the level of **15% of the Bank's paid-up capital** (Note: for rounding purposes, the working amount has been set at BDT400-million). Excesses over this limit will be permitted only upon the following conditions:
 - a) the excess exposure shall be of limited duration only, preferably on over-night call basis and in no case exceeding a term of one year;
 - b) the counterparty shall have a rating of at least "low risk" as determined by the methodology described in the next section; and
 - c) the Board shall be informed of these cases at its meeting immediately following the event of over-the-limit exposure.
2. The evaluation shall consist of two parts, the first being quantitative and the second qualitative. To facilitate such evaluation, the Bank shall obtain the latest audited financial statements of all potential counterparty banks, which should not be older than one year reckoned from the date of the analysis.

It would be preferable to conduct the analysis of all the banks at the same time, in order to derive their comparative standings and the statistical mean for each of the approved quantifiable measures.

With regard to the CAMEL rating, the analysis should indicate the cut-off date of the Bangladesh Bank's inspection upon which the rating was based.

3. Methodology for Setting Counterparty Limits

In order to determine the counterparty limit for each financial institution, a **systematic appraisal** shall be undertaken in a manner as to determine the quality of counterparties (i.e., prime, sub-prime, etc.) and the corresponding prudential exposure limit and pricing/terms.

a) Quantitative Analysis

A total of 9 factors under five broad categories shall be analyzed in accordance with the following formula:

<u>Quantitative Factors:</u>	<u>Weights</u>
Capital Adequacy	35
Balance Sheet Structure:	25
Equity-to-Total Assets	5
Advances-to-Total Assets	5
Advances-to-Deposits	15
Quality of Loan Assets	25
Profitability & Efficiency:	10
Interest Spread	4
Return on Average Assets	3
Return on Average Equity	3
CAMEL Rating	<u>5</u>
Total	<u>100</u>

The following scorecard shall be applied in the quantitative evaluation of the banks:

Capital			Balance Sheet Structure						Loans			Profitability & Efficiency						Camel Rating	Points
Capital Adequacy Coverage	Points	%-age of B & L Provisions No Points	Equity-to-Total Assets	Points	Advances-to-Total Assets	Points	AD Ratio	Points	%-age of Classified Loans	Points	Interest Spread	Points	Return on Ave. Assets	Points	Return on Ave. Equity	Points			
Over 50%	35.00	Raw data shown in Appendices 1 and 2 are for information	> 25%	5.00	< 50%	5.00	< 60%	15.00	0%	25.00	> 5%	4.00	> 2.5%	3.00	> 50%	3.00	A	5.00	
41 to 50%	29.17		20 to 25%	4.00	50 to 54%	4.29	61 to 65%	13.33	1 to 3%	22.22	4 to 5%	3.20	2.1 to 2.5%	2.50	41 to 50%	2.50	B	3.00	
31 to 40%	23.33		16 to 20%	3.00	55 to 59%	3.57	66 to 70%	11.67	4 to 6%	19.44	3 to 4%	2.40	1.6 to 2%	2.00	31 to 40%	2.00	C	1.00	
21 to 30%	17.50		11 to 15%	2.00	60 to 64%	2.86	71 to 75%	10.00	7 to 9%	16.67	2 to 3%	1.60	1.1 to 1.5%	1.50	21 to 30%	1.50	D/E	-	
11 to 20%	11.67		6 to 10%	1.00	65 to 69%	2.14	76 to 80%	8.33	10 to 12%	13.89	1 to 2%	0.80	0.6 to 1%	1.00	11 to 20%	1.00			
1 to 10%	5.83		1 to 5%	-	70 to 74%	1.43	81 to 85%	6.67	13 to 15%	11.11	< 1%	-	.01 to .05% Loss	0.50	1 to 10%	0.50			
Deficient	-				75 to 79%	0.71	86 to 90%	5.00	16 to 18%	8.33					Loss	-			
					> 80%	-	91 to 95%	3.33	19 to 21%	5.56									
						96 to 100%	1.67	22 to 24%	2.78										
Constant =	5.83		Constant =	1.00	Constant =	0.71	Constant =	1.67	Constant =	2.78	Constant =	0.80	Constant =	0.50	Constant =	0.50			

Based on the results of the analysis in No. 2 above, an initial decision will be made on the basis of the matrix below:

Rules for Setting Treasury Counterpart Limits					
CAMEL Rating	Score	Type	Amount	Price	Treasury Rating
A	> 50	Clean	15% of capital (Maximum)	Market	Prime
	40.1 to 50	Clean	12.5% of capital	Market	Sub-Prime
B	> 50	Clean	12.5% of capital	Market	
	40.1 to 50	Clean	10% of capital	Market + 1%	
C	> 50	a) Clean	10% of capital	Market + 2%	Low-to-Medium Risk
		b) Secured	7.5% of capital	Market + 1%	
	40.1 to 50	Secured	5% of capital	Market + 2%	

The Banks should not transact with counterparties whose CAMEL rating is lower than “C” or whose gross score is less than “40”The computation of the limits should be based on either the Bank’s paid-up capital or that of the counterparties, whichever is lower.

b) Qualitative Analysis

The second part of the evaluation should be used to provide complementary information that either confirms or modifies the initial decision. The format for this portion of the evaluation will be as follows:

	Very Poor or Non- Existent		Fair		Excellent
	1	2	3	4	5
Board & Senior Management:					
a) Competence & track record					
b) Integrity & professionalism					
c) Business strategy and execution					
Trends & other developments not otherwise captured in the financial information					

4. Modifications of the initial decision can be made in the following ways:

- a) An increase in the exposure limit or reduction in the rates or terms of the loan or investment may be made only if the qualitative scores are 4 and 5, and the business trends and developments are positive.
- b) On the other hand, a reduction in the exposure limit or increase in the rates or terms of the loan or investment is called for, if the qualitative scores are below the fair rating of 3 or if business trends and development are negative.

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Head Office, Dhaka

FUND POSITION (PROVISIONAL) AS OF _____
(Specimen)

- a) CRR (Cash Reserve Requirement) POSITION**
1. Available : _____
 2. Requirement (5.00% CRR = _____) + (25% T.T. Discount Limit = _____) : _____
 3. Surplus/(Shortfall) (2-1) : _____
- B. 13% SLR Position**
1. Available : _____
 2. Requirement : _____
 3. Surplus/(Shortfall) : _____
- C. SLR (Statutory Liquidity Reserve) POSITION**
1. Available : _____
 2. Requirement (18.00% SLR = _____) + (25% T.T. Discount Limit = _____) : _____
 3. Surplus/(Shortfall) (2-1) : _____
- D. CASH POSITION** (Excluding Till Money Balance with Sonali Bank & F.C. Balance)
1. Cash Surplus/(Shortfall) in CRR : _____
 2. Cash kept in CRR A/C to meet short-fall in Approved Securities : _____
 3. Investment under Inter-Bank Repo (+) : _____
 4. Borrowing under Inter-Bank Repo (-) : _____
 5. Bangladesh Bank Reverse Repo : _____
 6. Call Loan allowed to different Banks and FIs (+) : _____
 7. Call Loan availed from other Banks and FIs (-) : _____
 8. Overall Liquidity Surplus/(Shortfall) : _____
- E. TOTAL LIQUIDITY POSITION**
1. Surplus/(Shortfall) in SLR (18%) : _____
 2. Net Call Loan (difference between Call Loan Allowed & Availed) : _____
 3. Term Deposit Balance with other Banks : _____
 4. Domestic Borrowing from Government & BB (except REPO) : _____
 5. Overall Liquidity Surplus/(Shortfall) : _____
- F. FUND REQUIREMENT FOR INDUSTRIAL LOAN**
1. Undisbursed industrial loans as of _____) : _____

	<u>As of (date)</u>	<u>Amount</u>	<u>Compared to (date)</u>	<u>Compared to (date)</u>
Deposits				
Advances				
Call Deposit (%)				

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STATEMENT OF CALL LOANS BORROWINGS FROM OTHER BANKS
(Specimen)

S.I. No.	Name of Bank	(Date)		(Date)		(Date)	
		Amount	Rate	Amount	Rate	Amount	Rate

CALL LOAN(S) AVAILED

Total weighted average (%)
Minimum (%)
Maximum (%)
Expense for call loan(s) availed (Lac Taka)
Today's profit from borrowing

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TERM PLACEMENTS as of _____
 (Specimen)

S.I. No.	Name of Institution	Tenor (months)	Date of Original Placement	Date of Renewal	Date of Maturity	Amount (in Crore Tk)	Interest Rate
Banks							
Total:							
Non-Banks							
Total:							
Grand Total:							

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COST OF FUNDS & NET INTEREST MARGIN as of _____
(Specimen)

	DEPOSIT TYPE								Total Deposits	Bonds & Others Loans	GRAND TOTAL
	FDR	STD	Savings	DPS	APS	CD	GPF	Others *			
1	Amt of Average Deposit **										
2	CRR (5%)										
3	SLR (13%)										
4	Funds available for investment										
5	Interest Cost										
6	Earnings on SLR @ __%										
7	Interest Cost for Maintaining SLR (5 - 6)										
8	Cost of Deposit ((7 / 4) x 100)										
9	Total Interest Cost										
10	Administrative Cost (9 - 5)										
11	Administrative Cost in % (10 / 4)										
12	Total Cost of Fund (8 + 11)										
13	Ave. Yield on just Loans & Advances										
14	Net Interest Margin on Loans & Advances										

* Breakdown of Others:

LIQUIDITY STATEMENT
(Asset & Liability Maturity Analysis)
As of _____
(Specimen)

	<i>Up to 1 month</i>	<i>1 - 3 months</i>	<i>3 - 12 months</i>	<i>1 - 5 years</i>	<i>More than 5 years</i>	Total
1) Assets:						
Cash in hand						
Balance with other banks & financial institutions						
Money at call on short notice						
Investment						
Loans and Advances						
Fixed assets incl. land furniture & fixtures						
Other Assets						
Non-banking assets						
Total Assets						
2) Liabilities:						
Borrowings from Bangladesh Bank, other banks, financial institutions and agents						
Deposits						
Other Accounts						
Provisions & other liabilities						
Total Liabilities						
Net Liquidity Gap (1-2)						

Net results of the Liquidity Statement represents the Shareholders Equity in the Bank

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MONTH-WISE INFLOW-(OUTFLOW) OF FOREIGN CURRENCY

1. For the Year _____ (Actual)
2. For the Year _____ (Projected)
(Specimen)

Month	INFLOW				OUTFLOW				Cum. Inflow	Cum. Outflow	Net Position
	Purchases from BB	Overseas Remittances	Export Proceeds	Total	Interbank Sales	L/C Payments	Service Payments	Total			
Jan											
Feb											
Mar											
Apr											
May											
Jun											
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Totals											

AGRANI BANK
FUND MANAGEMENT DIVISION
Head Office, Dhaka

TREASURY PERFORMANCE ANALYSIS
Local Currency
(in Tk Crore)

ITEMS	Y1	Y2	Y3	Y4	Y5	Year-to-Date
1 PROFIT						
2 HEAD-WISE INCOME						
A. <u>Securities, Shares & Debentures</u>						
i. Sale of shares						
ii. Bonds						
iii. Warrants						
Subtotal						
B. <u>Treasury Bills</u>						
i. 91-day BB Bill						
ii. 30-day BB Bill						
iii. 28-day Treasury Bill						
iv. 30-day Treasury Bill						
v. 91-day Treasury Bill						
vi. 182-day Treasury Bill						
vii. 1-Year Treasury Bill						
viii. 354-day Treasury Bill						
ix. 2-year term Treasury Bill						
x. 5-year term Treasury Bill						
xi. Reverse Repo (BB)						
xii. Inter-Bank Repo						
Subtotal						
C. <u>Call Loan/Other Bank Deposit</u>						
i. Call loans						
ii. Other bank deposit (FDR)						
Subtotal						
Total						
3 HEAD-WISE EXPENDITURE						
i. Rediscounting						
ii. Repo						
iii. Call loan						
iv. Penalty						
Subtotal						
4 NET INCOME						
5 MONTHLY AVERAGE						

GLOSSARY OF FINANCIAL TERMS

Asset-liability management

The task of managing the funds of a financial institution to accomplish the two goals: (1) to earn an adequate return on funds invested; and (2) to maintain a comfortable surplus of assets over liabilities; also referred to as surplus management.

Arbitrage

The act of taking advantage of a state of imbalance between two or more markets, wherein a combination of matching deals are struck to exploit the imbalance with the profit being the difference between the market prices

At par

A price equal to the nominal or face value of a security

Bad debt

A debt that is deemed uncollectible or is written off

Balance sheet

Also called the statement of financial condition, it a summary of a company's assets, liabilities and owner's equity.

Bank for International Settlements (BIS)

An international bank headquartered in Basel, Switzerland, which serves as a forum for monetary cooperation among several European central banks, the Bank of Japan, and the U.S. Federal Reserve System. Founded in 1930 to handle the German payment of World War I reparations, it now monitors and collects data on international banking activity and promulgates rules concerning international bank regulation.

Base rate

Interest rate charged by banks to their best corporate customers in Great Britain; it is the British equivalent of the prime rate in the United States.

Basis point

In the bond market, the smallest measure used for quoting yields is a basis point. Each percentage point of yield equals 100 basis points. Basis points are also used for interest rates. A bond's yield that increases from 7.00% to 7.50% would be said to have risen 50 basis points.

Blue-chip company

Used in the context of general equities, it refers to a large and credit-worthy enterprise that has a long record of profit growth and dividend payment, and a reputation for quality management and wide acceptance of its products or services as well as its ability to make money and pay dividends. A blue chip stock is typically high-priced and has moderate dividend yields.

Bond

Any interest-bearing or discounted government or corporate security that obligates the issuer to pay the bondholder a specified sum of money, usually at specific intervals, and to repay the principal amount of the loan at maturity. When an investor buys bonds, he or she is lending money. Bondholders have an I.O.U. from the issuer but no corporate ownership privileges as stockholders do.

Bond discount

This is the amount by which the market price of a bond is lower than its face value. When opposite conditions exist and the market price is higher than face value, the difference is termed a bond premium.

Capital market

The market for trading long-term debt instruments, i.e., those that mature in more than one year

Central bank

A country's main bank whose responsibilities include: the issue of currency; the administration of monetary policy including open market operations; holds deposits representing the reserves of other banks; and engages in transactions designed to facilitate the conduct of business and protect the public interest. In the U.S., central banking is a function of the Federal Reserve System.

Certificate of deposit (CD)

Also known as a time deposit, this is a certificate issued by a bank that indicates a specified sum of money has been deposited. A CD has a maturity date and a specified interest rate, and can be issued in any denomination. Maturities range from a few weeks to several years. Interest rates are set by competitive forces in the market place.

Commercial loan

A short-term (typically 90 days) renewable loan used by a company to finance seasonal working capital needs, such as purchase of inventory or production and distribution of goods.

Common stock

This refers to securities that represent equity ownership in a company. Common shares let an investor vote on such matters as the election of directors. They also give the holder a share in the company's profits via dividend payments or the capital appreciation of the security. These units of ownership of a public corporation have a junior status to the claims of secured/unsecured creditors, bondholders and preferred shareholders in the event of liquidation.

Consumer Price Index (CPI)

This is a measure of prices of a fixed basket of goods bought by a typical consumer, including food, transportation, shelter, utilities, clothing, medical care, entertainment and other items.

Cost of capital

This refers to the required rate of return that a business could earn if it chose another investment with equivalent risk – in other words, the opportunity cost of funds employed as a result of an investment decision. Cost of capital is also calculated using a weighted average of a firm's cost of debt and classes of equity.

Coupon bond

A bond featuring coupons that must be presented to the issuer in order to receive interest payments

Coupon rate

In bonds, notes, or other fixed income securities, this is the stated percentage rate of interest usually paid periodically in a year

Credit rating

Formal evaluation of an individual's (or company's) credit history and capability of repaying loans and other obligations.

Credit risk

This is the risk that an issuer of debt securities or a borrower may default on its obligations, or that the payment may not be made on a negotiable instrument

Debt-equity ratio

This is an indicator of financial leverage, which compares assets provided by creditors to assets provided by shareholders.

Debt ratio

Total debt divided by total assets

Debt securities

Security representing money borrowed that must be repaid, and having a fixed amount, a specific maturity or maturities, and usually a specific rate of interest or an original purchase discount. Examples are bills, bonds, and commercial paper.

Dilution

This refers to the effect on earnings per share (EPS) and book value per share, if all convertible securities were converted, or all warrants or stock options were exercised.

Discount bond

Debt sold for less than its principal value; if a discount bond pays no coupon, it is called a zero-coupon bond.

Discount yield

The yield or annual interest rate on a security sold to an investor at a discount. A bond that is sold at \$4875 that matures to \$5000 has a discount of \$125. To calculate the discount yield: <discount divided by the face value of the security> multiplied by <the number of days in the year divided by the number of days to maturity>.

Discounted cash flow (DCF)

Future cash flows multiplied by discount factors to obtain present values

Discounting

Calculating the present value of a future amount, discounting is the opposite of compounding.

Dividend

A portion of a company's profit paid to common and preferred shareholders. A stock selling for \$40 a share with a annual dividend of \$2 yields the investor 5%.

Dividend payout ratio

Percentage of earnings paid out as dividends. In general, the higher the payout ratio, the more mature the company. In western economies, electric and telephone utilities tend to have the highest payout ratios, whereas fast-growing companies usually reinvest all earnings and pay no dividends.

Dividend policy

Standards by which a firm determines the amount of money it will pay as dividends

Dividend yield (stocks)

Indicated yield which represents annual dividends divided by the current stock price

Dupont system of financial control

The expression of return on assets (RoA) in terms of profit margin and asset turnover

Duration

A common gauge of price sensitivity of a fixed income asset or portfolio to a change in interest rates

Earnings per share (EPS)

This is an indicator of profitability, where a company's profit is divided by its number of outstanding shares. If a company earning \$2 million in one year had 2 million share of stock outstanding, EPS would be \$1 per share. Note: company's usually use a weighted average number of shares outstanding over the reporting term, especially if it issues new stocks during the period.

Earnings yield

This is the ratio of earnings per share, after allowing for tax and interest payments on fixed interest debt, to the current share price. This is the inverse of the price-earnings ratio, it is the total 12-months earnings divided by the number of outstanding shares, divided by the recent

price multiplied by 100. The end result is shown in percentage terms. This ratio is used because it avoids the problem of zero earnings in the denominator of the price-earnings ratio.

Economic assumptions

General market environment parameters a firm expects to operate in over the life of a financial plan

Economic growth rate

The annual percent rate of change in the gross national product (GNP)

Economic income

Cash flow plus change in present value

Economic indicators

The key statistics of the economy that reveal the direction the economy is headed; for example, the unemployment rate and the inflation rate

Equity

Ownership interest in a firm. Also, the residual monetary value of a futures trading account, assuming its liquidation is at the going trade price. In real estate, this is the monetary difference between what property could be sold for and debt claimed against it. In a brokerage account, equity equals the value of the account's securities minus any debit balance in a margin account. Equity is also the shorthand for stock market investments.

European Central Bank (ECB)

The bank created to monitor the monetary policy of the 12 countries that have converted to the Euro from their local currencies, namely: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

Financial leverage

The use of debt to increase the expected return on equity, measured by the ratio of debt to debt-plus-equity

Financial leverage ratios

Common ratios are debt divided by equity, debt divided by the sum of debt plus equity. Related: capitalization ratios

Gearing

Financial leverage

Government securities (GS)

Negotiable securities, e.g., treasury bills, bonds and notes, and savings bonds issued by government, which are considered among the safest instruments available as they are backed by the government

Gross Domestic Product (GDP)

The market value of goods and services produced by labor and property over time, GDP is made up of consumer and government purchases, private domestic investments, and net exports of goods and services.

Hedge/hedging

A strategy to reduce the risk of an investment. A perfect hedge is one eliminating the possibility of future gain or loss.

Index

Statistical composite that measures changes in the economy or in financial markets, often expressed in percentage changes from a base year or from the previous period. Indices measure the ups and downs of stock, bond, and some commodities markets, in terms of prices and weighting of companies in the index

Inflation

The rate at which the general level of prices for goods and services is rising

Interbank rate

(See LIBOR)

Interest

The price paid for borrowing money. It is expressed as a percentage rate over a period of time and reflects the rate of exchange of present consumption for future consumption; also the share or title in property.

Interest rate risk

The chance that a security's value will change due to a change in interest rates (for example, a bond's price drops as interest rates rise). For a depository institution, this is also called a funding risk, i.e., the risk that spread income will suffer because of a change in interest rates.

Interest rate swap

This is a binding agreement between counterparties to exchange periodic interest payment on some predetermined principal amount, which is called the notional principal. For example, one party will pay fixed and receive variable.

Inverted yield curve

When short-term interest rates are higher than long-term rates, this is the anti-thesis of a positive yield curve.

Investment bank

A financial intermediary that will perform a variety of services, including aiding in the sale of securities, facilitating mergers and other corporate reorganizations, acting as brokers to both individual and institutional clients, and trading for their own accounts.

Lender of last resort

Characterization of a central bank's role in bolstering a bank that faces large withdrawals of funds, thereby maintaining the stability of the banking system which could be threatened if major banks were to fail.

Letter of credit (L/C)

A form of guarantee of payment issued by a bank on behalf of a borrower

Leverage

This commonly refers the use of debt financing. In investment banking, this may refer to any property of rising or falling prices at a proportionally greater amount than comparable investments; for example, an option is said to have high leverage compared to the underlying stock because a given price change in the stock may result in a greater increase or decrease in the value of the option.

Leverage ratios

Measures the relative value of stockholders, capitalization and creditors obligations, and of a firm's ability to pay financing charges; also, the value of a firm's debt to the total value of the firm (debt plus stockholder capitalization).

Liability swap

An interest rate swap used to alter the cash flow characteristics of an institution's liabilities, so as to provide a better match with its assets

Line of credit (LOC)

An informal or formal arrangement between a bank and a customer, allowing the customer to borrow up to a specified maximum during a specified period, usually one year

Liquidity

A high level of trading activity, allowing buying and selling with minimum price disturbance; also, a market characterized by the ability to buy and sell with relative ease

Liquidity ratios

Ratios that measure a firm's ability to meet its short-term financial obligations on time, such as the ratios of current assets to current liabilities

London Interbank Offered Rate (LIBOR)

This is the rate of interest that major international banks in London charge each other for borrowings. Many variable interest rates in the U.S. are based on spreads off LIBOR. By contrast with the bid rate LIBID quoted by banks seeking such deposits.

Macroeconomics

Analysis of a country's economy as a whole

Mark-to-market

Adjustment of the book value or collateral value of a security to reflect current market value

Market-book ratio

Market price of a share divided by its book value per share

Market capitalization

A measure of corporate size, this is the total value of all outstanding shares, computed as shares *times* current market price.

Market value

- (a) The price at which a security is trading and could presumably be purchased or sold; or
- (b) What investors believe a firm is worth, calculated by multiplying the number of shares outstanding by the current market price.

Maturity

For a bond, the date on which the principal is required to be repaid; in an interest rate swap, the date that the swap stops accruing interest.

Merchant bank

A British term for a bank that specializes not in lending its own funds but in providing various financial services such as accepting bills arising out of trade, underwriting new issues, and providing advice on acquisitions, mergers, foreign exchange, or portfolio management

Microeconomics

Analysis of the behavior of individual economic units such as companies, industries, or households

Monetary policy

Actions taken by the Board of Governors of the Federal Reserve System, the European Central Bank and the Bank of England, to influence the money supply or interest rates

Money supply

- MI-A - Currency plus demand deposits
- MI-B - MI-A plus checkable deposits
- M2 - MI-B plus overnight repos, money market funds, savings and small (less than \$100) time deposits
- M3 - M-2 plus large time deposits and term repos
- L - M-3 plus other liquid assets

Mortgage

A loan secured by the collateral of some specified real estate property that obliges the borrower to make a predetermined series of payments

Mortgage-backed securities (MBS)

Investment instruments backed by a pool of mortgage loans

Mortgage rate

The interest rate on a mortgage loan

Negative yield curve

When the yield on a short-term security is higher than the yield on a long-term security, partially because high interest rates are creating greater demand for short-term borrowing

Negotiated certificate of deposit

A large-denomination CD, generally \$100 million or more, that can be sold but cannot be cashed in before maturity

Net income

A company's total earnings, reflecting revenues adjusted for costs of doing business, depreciation, interest, taxes and other expenses

Net present value (NPV)

The present value of expected future cash flows minus the cost

Net worth

Common stockholders' equity which consists of common stock, surplus and retained earnings

Nominal interest rate

The interest rate unadjusted for inflation

Nominal yield

The income received from a fixed income security in one year divided by its par value. See also: Coupon rate

Non-performing asset

An asset that is not effectively producing income, such as an overdue loan

Notes to financial statements

A detailed set of notes immediately following the financial statements in an annual report that explains and expands on the information in the financial statements

Obligor

A person or party who has an obligation to pay off a debt

Off-balance sheet financing

Financing that is not shown as a liability on a company's balance sheet

Open repo

A repurchase agreement with no definite repayment term, made on a day-to-day basis, and either the borrower or the lender may choose to terminate. The rate paid is higher than on an overnight repo and is subject to adjustment if rates move.

Ordinary shares

Applies mainly to international equities. Shares of non-U.S. companies traded in their individual home markets, usually cannot be delivered in the U.S.

Overnight repo

A repurchase agreement with a term of one day

Par

Equal to the nominal or face value of a security; or a bond selling at par is worth an amount equivalent to its original issue value or its value upon redemption at maturity

Par bond

A bond trading at its face value

Par value

Also called the maturity value or face value; the amount that an issuer agrees to pay at the maturity date

Parallel shift in the yield curve

A shift in economic conditions in which the change in the interest rate on all maturities is the same number of basis points; In other words, if the 3-month T-Bill increases 100 basis points (1%), then the 6-month, 1-year, 5-year, 10-year, 20-year, and 30-year rates all increase by 100 basis points as well

Payout ratio

Generally, the proportion of earnings paid out to the common stockholders as cash dividends; more specifically, the firm's cash dividend *divided* by the firm's earnings in the same reporting period.

Peak

The high point at the end of an economic expansion until the start of a contraction

Portfolio

A collection of investments, real and/or financial

Positive yield curve

When long-term debt interest rates are higher than short-term debt rates (because of the increased risk involved with long-term debt securities)

Present value (PV)

The amount of cash today that is equivalent in value to a payment, or to a stream of payments, to be received in the future; to determine the PV, each future cash flow is multiplied by a present value factor. For example, if the opportunity cost of funds is 10%, the present value of \$100 to be received in one year is $\$100 \times [1 / (1 + 0.10)] = \91 .

Present value factor

Factor used to calculate an estimate of the present value of an amount to be received in a future period. If the opportunity cost of funds is 10% over the next year, the factor is $[1 / (1 + 0.10)]$.

Present value of growth opportunities

Net present value (NPV) of investment a firm is expected to make in the future

Price-book ratio

Compares a stock's market value to the value of total assets *less* total liabilities (book value); determined by dividing current stock price by common stockholder equity per share, adjusted for stock splits. Also called Market-to-Book

Price/Earnings ratio (PE ratio)

Current stock price *divided* by trailing annual earnings per share or expected annual earnings per share. Assume XYZ Co. sells for \$25.50 per share and has earned \$2.55 per share this year; $\$25.50 = 10 \text{ times } \2.55 . XYZ stock therefore sells for 10 x earnings.

The PE ratio, known as the *multiple*, gives investors an idea of how much money they are paying for a company's earning power. The higher the PE, the more investors are paying, and therefore the more earnings growth they are expecting. High PE stocks – those with multiples over 20, for example – are typically young, fast-growing companies. They are far riskier to trade than low PE stocks, since it is easier to miss high-growth expectations than low-growth predictions. Low PE stock tend to be in low-growth or mature industries, in stock groups that have fallen out of favor, or in old, established, blue-chip companies with long records of earnings stability and regular dividends. In general, low PE stocks have higher yields than high PE stocks, which often pay no dividends at all.

Prime rate

The interest rate at which bank lend to their best (prime) customers; more often than not, a bank's most creditworthy customers borrow at rates below the prime rate.

Rate of interest

The rate, as a proportion of the principal, at which interest is computed

Rate of return

Calculated as the <value now> minus <value at time of purchase> *divided* by the <value at the time of purchase>. For equities, dividends are often included with the value now.

Ratings

An evaluation of the credit quality of a company's debt issue by Moody's, S&P, and Fitch Investors Service; investors and analysts use ratings to assess the riskiness of an investment.

Ratio analysis

A way of expressing relationships between a firm's accounting numbers and their trends over time, that analysts use to establish values and evaluate risks

Real interest rate

The rate of interest excluding the effect of expected inflation; i.e., the rate that is earned in terms of constant-purchasing-power. Also the interest rate expressed in terms of real goods, i.e., nominal interest rate adjusted for expected inflation

Realized profit (or loss)

A capital gain or loss on securities held in a portfolio that has become actual by the sale or other type of surrender of one or many securities

Real rate of return

The percentage return on some investments that has been adjusted for inflation

Redemption date

The date on which a bond matures or is redeemed

Reference rate

A benchmark interest rate (such as LIBOR) used to specify conditions of an interest rate swap or an interest rate agreement

Repo

This refers to an agreement in which one party sells a security to another party and agrees to repurchase it on a specified date for a specified price. See also: repurchase agreement

Required return

The minimum expected return one would need in order to purchase an asset, i.e., to make an investment

Retail credit

Credit granted by a firm to consumers for the purchase of goods or services

Retained earnings

Accounting earnings that are retained by a firms for reinvestment in its operations; earnings that are not paid out as dividends

Return on assets (RoA)

This is an indicator of profitability, determined by dividing net income for the past 12 months by total average assets. RoA, a percentage, can be decomposed into return on sales (net income/sales) multiplied by asset utilization (sales/assets).

Return on equity (RoE)

An indicator of profitability, determined by dividing net income for the past 12 months by common stockholder equity; also used as a measure of how a company is using its money. RoE may be decomposed into return on assets (RoA) multiplied by financial leverage (total assets/total equity).

Return on investment (RoI)

Generally, book income as a proportion of net book value

Reverse repo

In essence, this refers to a repurchase agreement. From the customer's perspective, the customer provides a collateralized loan to the seller.

Revolving line of credit (LOC)

A bank line of credit on which the customer pays a commitment fee and can take and repay funds at will. Normally, a revolving LOC involves a firm commitment from the bank for a period of several years.

Riding the Yield Curve

Buying long-term bonds in anticipation of capital gains as yields fall with the declining maturity of the bonds

Risk

Often defined as the standard deviation of the return on total investment, or the degree of uncertainty of return on an asset

Risk-averse

Describes an investor who, when faced with two investments with the same expected return but different risks, prefers the one with the lower risk

Risk-based capital ratio

This is a bank requirement that there be a minimum ratio of estimated total capital to estimated risk-weighted assets.

Risk-free rate of return

The rate earned on a risk-free asset (e.g., T-bill)

Risk management

The process of identifying and evaluating risks, and selecting and managing techniques to adapt to risk exposures

Risk premium

The reward for holding the risky equity market portfolio rather than the risk-free asset; the spread between Treasury and non-Treasury bonds of comparable maturity

Risk-return trade-off

The basic concept that higher expected returns accompany greater risk, and vice versa

Risk-adjusted return

Return earned on an asset normalized for the amount of risk associated with that asset

Risk-free asset

An asset whose future normal return is known today with certainty, the risk-free asset is commonly defined as short-term obligations of the government

Savings deposits

Accounts that pay interest, typically at below-market interest rates, that do not have a specific maturity and that usually can be withdrawn upon demand

Secondary market

This is the market in which securities are traded after they are initially offered in the primary market. Most trading occurs in the secondary market. The New York Stock Exchange, as well as all other stock exchanges and the bond markets, are secondary markets. Seasoned securities are traded in the secondary market.

Securitization

The act of creating a more-or-less standard investment instrument, such as a mortgage pass-through security, by pooling assets to back the instrument; also refers to the replacement of non-marketable loans and/or cash flows provided by financial intermediaries with negotiable securities issued in the public capital markets

Shareholder's equity

This is a company's total assets minus total liabilities; also known as net worth

Short-term

Any investment with a maturity of one year or less

Soft landing

A term describing a growth rate high enough to keep the economy out of recession, but also low enough to prevent high inflation and interest rates

Sovereign risk

The risk that a central bank will impose foreign exchange regulations that will reduce or negate the value of foreign exchange contracts; also refs to the risk of government default on a loan made to a country to guaranteed by it

Spot interest rates

Interest rates fixed today on a loan that is made today

Spot rate

The theoretical yield on a zero-coupon Treasury security

Spread income

Also called margin income, this is the difference between income and cost. For a depository institution, this is the difference between the assets it invests in (loans and securities) and the cost of its funds (deposits and other sources)

Stakeholders

All parties that have an interest (financial or otherwise) in a firm – stockholders, creditors, bondholders, employees, customers, management, the community and the government

Standard deviation

The square root of the variance; a measure of dispersion of a set of data from its mean

Steepening of the yield curve

A change in the yield curve, where the spread between the yield on a long-term and short-term Treasury has increased; it can also be compared to flattening of the yield curve

Subordinated debt

Debt over which senior debt takes priority; in the event of bankruptcy, subordinated debt holders receive payment only after all senior debt claims are paid in full

Sustainable growth rate

Maximum rate of growth a firm can sustain without increasing financial leverage

Swap

An agreement in which two entities lend to each other on different terms, e.g., in different currencies, and/or at different interest rates (e.g., fixed and floating)

Term structure of interest rates

Relationship between interest rates on bonds of different maturities, usually depicted in the form of a graph often called a yield curve.

Time value of money

The concept that money today is worth more than in the future, because money received today can earn interest up until the time the future money is received.

Total debt-to-equity ratio

A capitalization ratio comparing current liabilities *plus* long-term debt to shareholder's equity

Treasury

Internationally, the U.S. Department of the Treasury which issues all Treasury bonds, notes and bills, as well overseeing agencies; also, the department within a company/bank that oversees its financial operations including the issuance of new shares

Treasury bills

Debt obligations of a government's treasury, that have maturities of one year or less (i.e., 91, 182, 182 days or 52 weeks)

Treasury bonds

Debt obligations of a government's treasury, that have maturities longer than 1 year and can be up to 10 years or more

Underwrite

To bring securities to the market; or to guarantee (as to guarantee the issuer of securities a specified price by entering into purchase and sale agreement)

Underwriter

A firm, usually an investment bank, which buys an issue of securities from a company and resells it to investors; or in general, a party that guarantees the proceeds to the firm from a security sale, thereby in effect taking ownership of the securities

Underwriting

Acting as the underwrite in the issue of new securities for a firm

Underwriting fee

The portion of the gross underwriting spread that compensates the securities firm for its services in underwriting a public offering

Underwriting syndicate

A group of investment banks that work together to sell new security offerings to investors; the underwriting syndicate is lead by the lead underwriter

Unmatched book

If the average maturity of a bank's liabilities is shorter than that of its assets, it is said to be running an unmatched book. The term is commonly used with the Euro-market. It also refers to entering into over-the-counter (OTC) derivative contracts and not hedging by making trades in the opposite direction to another financial intermediary; in this case, the firm with an unmatched book usually hedges its net market risk with futures and options.

U.S. Treasury bill

U.S. government debt with a maturity of less than a year

U.S. Treasury bond

U.S. government debt with a maturity of more than 10 years

U.S. Treasury note

U.S. government debt with a maturity of 1 to 10 years

Variable-rate loan

Loan made at an interest rate that fluctuates depending on a base interest rate, such as the prime rate or LIBOR

Weighted average cost of capital (WACC)

Expected return on a portfolio of all a firm's securities, used as a hurdle rate for capital investment. Often the weighted average of the cost of equity and the cost of debt; the weights are determined by the relative proportions of equity and debt in a firm's capital structure.

Yield

The percentage rate of return paid on a stock in the form of dividends, or the effective rate of interest paid on a bond or note

Yield curve

This is the graphic depiction of the relationship between the yield on bonds of the same credit quality but different maturities; also known as the term structure of interest rates. The yield curve can accurately forecast the turning points of the business cycle.

Yield curve strategies

Investments that position a portfolio to capitalize on expected changes in the shape of the Treasury yield curve

Yield to maturity (YTM)

The percentage rate of return paid on a bond, note or other fixed income security if the investor buys and holds it to its maturity date. The calculation for YTM is based on the coupon rate, length of time to maturity, and market price. It assumes that coupon interest paid over the life of the bond will be reinvested at the same rate.

Zero-coupon bond

A bond in which no periodic coupon is paid over the life of the contract; instead, both the principal and the interest are paid at the maturity date

References:

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- Bloomberg.com