

FIRST+

Financial Institution Resilience & **ST**rengthening

Asset and Liability Management:

Prudent Practices

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What is Asset Liability Management (ALM)?

ALM establishes a framework that governs balance sheet management to maximise risk-adjusted returns within the Governance Board's risk appetite and regulatory requirements.

What is included in the framework?



Policies, Procedures, Benchmarks and Limits

What are the Specific Risks Monitored by Asset Liability Committee (ALCO)?

- **Liquidity risk** entails the risk not to meet one's commitments by the usage or conversion of one's assets
- **Maturity risk** is the risk that the financial institution can not pay its obligations on a timely basis as they come due, to accommodate business growth and acquisitions, and to fulfill obligations under stress conditions
- **Interest rate risk** represents the risk of decrease in the value of the financial institution (including Net Interest Income) induced by a variation in interest rates
- **Exchange rate risk** expresses the risk of financial loss through variation in the currency rates

**Goal of ALCO:
No major shocks to earnings and equity.**



Bank of Ghana

Risk Management Guidelines for Rural and Community Banks (RCBs) – May 2021

Liquidity Risk

- Governance Board to **set liquidity limits** (reserve requirements)
- An Asset Liability Committee (ALCO) is recommended to be instituted by medium to large RCBs, with small sized RCBs ensuring a schedule officer is in charge of coordinating activities relating to asset-liability management

Interest Rate Risk

- Governance Board to **set tolerable limits for interest rate risk management.**
- Measurement system should be established to **assess the effects of interest rate changes** on both earnings and the economic value (or net worth) of RCB

ALCO: Main Responsibilities

- **Monitoring organization's tolerance levels** and make appropriate recommendations to the Governance Board.
- **Establish procedures** primarily through timely reports to the Governance Board for monitoring compliance with the limits and tolerance levels.
- **Originate and perform periodic reviews** of the organization's Financial Management Policy including tolerance limitations and guidelines for risk management.
- **Other Responsibilities:**
 - Pricing of assets and liabilities
 - Investment in various assets and liabilities
 - Review of new asset or liability products
 - Liquidity levels to meet projected needs

ALCO: In Practice

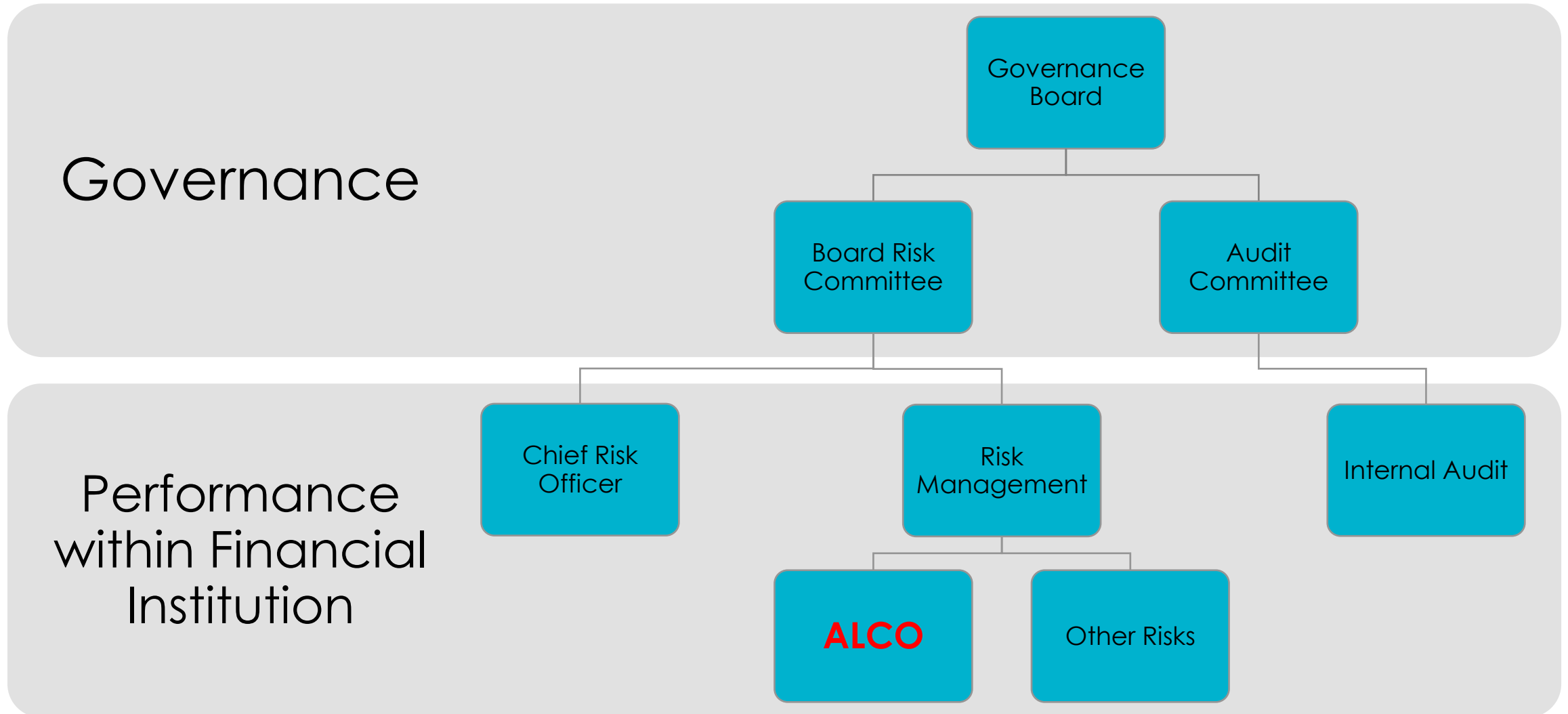
Evaluating specific risks under different possible scenarios, including:

- *What if unexpected large volume of depositor withdrawal their deposits?*
- *What if loan repayments occur faster than anticipated?*
- *What happens if interest rates suddenly rise by 100 basis points (1%)?*
- *What happen if the Cedi devalues by 20% against the US dollar?*

ALCO NEEDS TO BE CRITICAL THINKERS– ASK QUESTIONS!



ALCO in the Organization



ALCO Committee Members

- **Voting Members**
 - Chief Executive Officer**
 - Chief Financial Officer/Finance Officer**
 - Risk Manager/Chief Risk Manager**
 - Chief Investment Officer/Head of Treasury**
- **Nonvoting members**
 - Chief Credit Officer/Head of Lending**
 - Chief Operating Officer**



ALCO Agenda

- **Review and Approval of Minutes of Prior Meeting**
- **Discussion of Current and Future Economic Conditions and Financial Markets**
- **Discussion of any Regulatory Changes**
- **Liquidity – Short and Long Term**
- **Interest Rate Sensitivity**
 - **Interest rate movements-how do they affect the balance sheet and income statement**
 - **Investment Portfolio Mix**
- **Currency Risk**
 - **Any mismatches that can affect balance sheet**

ALCO Policies

- Funds Management Policy
(includes ALCO Charter)
- Investment Policy

Will send sample policies after webinar



Funds Management Policy

Established Target Ratios and Guidelines

- **Loans to Deposit Ratio** is total outstanding loans (before allowance for loan losses) divided by total deposits. An acceptable range is 90% to 105%.
- **Liquidity Ratio** is total cash and liquid investments divided by total assets. An acceptable range is from 10% to 20%.
- **Currency risk exposure** is net open exposure (of any one currency) divided by equity. An acceptable range is +/- 10%.
- **Rate Shocked Interest Margin Simulation Analysis** - An acceptable range for a 12 month cumulative % effect on net interest income is:
 - +/- 200 basis point shock change -10.0% tolerance measured quarterly

Recommended
by
Management
and
Approved
by
Governance
Board

Liquidity Risk Monitoring

- *Short term Liquidity*
 - Daily/Weekly Cash Flows over 30-60 days
 - Ratios
 - Loans to deposits ratio
- *Long Term Liquidity*
 - *Meet obligations over time.*
- *Other*
 - Liquidity Crisis Contingency Planning
 - Balance Sheet Growth

Interest Rate Risk

- The risk that arises from potential changes in market interest rates that can adversely affect the value of the organization's financial assets and liabilities.
- This risk can arise from maturity mismatches of assets and liabilities, as well as from the repricing characteristics of such assets and liabilities.



Maturity Risk – Gap Analysis

Measures

- **Difference between the value of its risk sensitive assets that *mature* during that period and the value of its risk sensitive liabilities that *mature* during that period.**

Policy Implications

- **Set Limits on Ratio of Cumulative Gap to Equity**
 - **+/-20% on a cumulative basis**
- **Off balance sheet tools available (Lines of Credit)**

Maturity Gap Analysis – Example

Oh NO!– The Limit is
+/- 20% of total
Equity!!

	≤ 1 month	2 months	3 months	4-6 months	6-12 months	1-3 years	4-5 years	No maturity	Total
Assets									
Cash	11,907,386								11,907,386
Investments	35,464,680	49,351,756	0	0	21,838,253	0	0	0	106,654,689
Loan Portfolio, net	19,878,908	21,482,307	23,272,500	64,244,379	85,986,279	44,463,093	1,486,698	0	260,814,163
Fixed assets	0	0	0	0	0	0	0	34,672,622	34,672,622
Other assets	169,384	169,384	169,384	508,151	1,016,303	0	0	23,771,724	25,804,329
Total Assets	67,420,358	71,003,447	23,441,883	64,752,530	108,840,834	44,463,093	1,486,698	58,444,346	439,853,189
Liabilities									
Term Savings Accounts	3,000,000	1,042,783	2,068,876	1,379,251	3,448,127				10,939,037
Demand Deposits	4,659,650								4,659,650
Loans payable	20,224,997	5,959,691	6,898,000	120,000,000	10,404,978	47,507,930	498,662	0	211,494,257
Other liabilities						4,979,100	0	0	4,979,100
Total Liabilities	27,884,647	7,002,474	8,966,876	121,379,251	13,853,105	52,487,030	498,662	0	232,072,044
Total Equity								207,781,145	207,781,145
Total Liabilities & Equity	27,884,647	7,002,474	8,966,876	121,379,251	13,853,105	52,487,030	498,662	207,781,145	439,853,189
Asset-Liability Gap	39,535,711	64,000,974	14,475,007	-56,626,721	94,987,729	-8,023,937	988,036	-149,336,799	0
As % of equity	19.0%	30.8%	7.0%	-27.3%	45.7%	-3.9%	0.5%	-71.9%	0.0%
Cumulative Gap	39,535,711	103,536,685	118,011,692	61,384,971	156,372,700	148,348,763	149,336,799	0	0
As % of equity	19.0%	49.8%	56.8%	29.5%	75.3%	71.4%	71.9%	0.0%	0.0%

What other factors to consider? Behavior of Depositors and Borrowers!

Bank of Ghana – Required Maturity Reporting

Maturity Profile of Assets & Liabilities		MNB700						
Institution Name	0							
Institution Code	0							
Institution Type	0							
Reporting Period (As-At-Date)	0-Jan-1900							
Section 93 (1) of the Banks and SDI Act 2016 (Act 930) and Section 32(1) of the NBFIs Act 2008 (Act 774)								
Item Code	Description	Time bands for maturing assets (in GHS)						
		0-7 days	8-30 days	31-90 days	91-180 days	181-365 days	Above 365 Days	Total
A. Financial Assets								
1.1)	Cash and bank balances							
1.2)	Short-term Investments/ Placements/Deposits							
1.3)	BOG/Treasury bills							
1.4)	Govt. and other debt fixed interest securities							
1.5)	Shares and Other Equity investments							
1.6)	Loans and advances to customers							
1.7)	Assets leased out under finance leases							
1.8)	Other (financial) Assets							
1.9)	Total Financial Assets (sum of 1.1 to 1.8)	-	-	-	-	-	-	-
B. Financial Liabilities								
2.1)	Deposits from customers							
2.2)	Amounts owed to banks/ Credit Institutions							
2.3)	Amounts owed to the Central Bank							
2.4)	Bonds and other negotiable Securities issued							
2.5)	Other Liabilities							
2.6)	Total Financial Liabilities	-	-	-	-	-	-	-
3.0)	Net Position of Assets (+) / Liabilities (-) (Line 1.9 less 2.6) in each maturity band	-	-	-	-	-	-	-
	Gap %	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

This is Gap as Percentage of Total Assets.

Interest Rate Risk (IRR)

Gap Analysis

Measures

- Difference between the value of its risk sensitive assets that re-price during that period and the value of its risk sensitive liabilities that re-price during that period.

Policy Implications

- Set Limits on Ratio of Gap and Cumulative Gap to Capital
- Impact of Interest Rate Movements on Net Interest Income
- Stress Testing: Evaluate impact on Net Interest Income (and hence Earnings) due to changes in interest rates.
- Understanding behavioral interest rate sensitivity. For example: small scale savings may not be rate sensitive

Interest Rate Gap Analysis

How is this different from maturity gap analysis?

	≤ 1 month	2 months	3 months	4-6 months	6-12 months	1-3 years	4-5 years	> 5 years	No Maturity	Total
Rate Sensitive Assets (RSA)										
Demand Deposits										\$0
Term Deposits										\$0
Investments						\$1,500				\$1,500
Loan Portfolio, net - Floating	\$200	\$200	\$200	\$600	\$1,200	\$2,000				\$4,400
Loan Portfolio, net - Fixed	\$800	\$800	\$800	\$2,400	\$4,800	\$5,000	\$2,000			\$16,600
Total Rate Sensitive Assets	\$1,000	\$1,000	\$1,000	\$3,000	\$6,000	\$8,500	\$2,000	\$0	\$0	\$22,500
Rate Sensitive Liabilities (RSL)										
Demand/Savings Accounts	\$200				\$2,000					\$2,200
Term Deposits	\$500	\$100	\$100	\$300	\$6,500	\$4,000	\$3,000	\$2,000		\$16,500
Local Currency Loans - Fixed	\$100		\$2,500	\$600	\$1,200	\$2,400	\$5,000			\$11,800
Foreign Currency Loans - Fixed						\$2,000		\$5,000		\$7,000
Total Rate Sensitive Liabilities	\$800	\$100	\$2,600	\$900	\$9,700	\$8,400	\$8,000	\$7,000	\$0	\$37,500
Total Equity									\$2,500	\$2,500
RSA-RSL Gap	\$200	\$900	-\$1,600	\$2,100	-\$3,700	\$100	-\$6,000	-\$7,000		-\$15,000
RSA-RSL Cumulative Gap	\$200	\$1,100	-\$500	\$1,600	-\$2,100	-\$2,000	-\$8,000	-\$15,000		-\$15,000
RSA/RSL	1.25	10.00	0.38	3.33	0.62	1.01	0.25	-		0.60
<i>Gap/Total Earning Assets (RSA)</i>	0.89%	4.00%	-7.11%	9.33%	-16.44%	0.44%	-26.67%	-31.11%	0.00%	
<i>Cumulative Gap/Total Equity</i>	8.00%	44.00%	-20.00%	64.00%	-84.00%	-80.00%	-320.00%	-600.00%	0.00%	

Looks when assets and liabilities reprices (change interest rates)

Interest Rate Risk

Some Considerations

- Financial Management Policy should establish limits for Gap
- Plan for large (sometimes “distress”) runoffs in term deposits which will have a negative effect on equity
- If investments in trading portfolio then Mark-To-Market needed
 - Hence sensitive to interest rate movements with resultant impact on Income Statement

Interest Rate Scenarios Effect on Net Interest Income

Total Net Interest Income = 2,600,780

		1- 30 days	1 to 3 months	3 to 6 months	6 to 12 months
Budgeted Net Interest Income		469,017	438,607	675,397	1,017,759
Sensitivity analysis:	New Rate				
A. If the average rate on a customer's loan portfolio decreased by 1%	23.0%	449,892	416,824	643,560	960,664
		Decreasing :		129,840	min
B. If interest rates on liabilities to banks increase by 0.5%	6.5%	466,769	431,592	668,006	988,383
		Decreasing :		46,030	min
Stress scenario:					
A. If the average rate on a customer's loan portfolio decreased by 2%	22.0%	430,767	395,041	611,723	903,570
		Decreasing :		259,679	min
B. If interest rates on liabilities to banks increase by 1%	7.0%	464,521	424,576	660,615	959,007
		Decreasing :		92,060	min

FX (Currency) Risk

- **Monitoring and addressing the risk associated when there is a currency mismatch between the organization's assets and liabilities that exposes it to foreign exchange rate fluctuations that can cause either losses or gains.**
- **Monitor key ratios like currency gap ratio (assets in specified currencies - liabilities in specified currencies/performing assets).**
- **Benchmark: Single currency exposed is not to exceed 10% of equity.**

FX Gap Analysis - Example

Oh no! Significant Open
Currency Risk!!!

All amounts in USD	EUR	US\$	Local Currency	Other	Total
Assets					
-cash and equivalent			702,142		702,142
-advances and accounts rcvable			36,979		36,979
-loans, net			2,336,791		2,336,791
-fixed and other assets			77,773		77,773
Total Assets	-	-	3,153,685	-	3,153,685
Liabilities and Equity					
-deposits					-
-loans payable		1,113,164	1,121,374		2,234,538
-other liabilities (1)			21,225		21,225
Total Liabilities	-	1,113,164	1,142,599	-	2,255,763
Equity			897,922		897,922
Total Liabilities and Equity	-	1,113,164	2,040,521	-	3,153,685
Net open position (A-TL and Equity)	-	(1,113,164)	1,113,164	-	-
Net open position as % equity	0%	-124%	124%	0%	0%

**Consider including provisions for devaluation expense on balance sheet and
income statement**

Some questions to consider....

- Is ALCO established?
- ALCO meeting regularly with fixed agenda? Minutes documented?
- ALCO meeting packages and reports provided to the ALCO members at least 2 days prior to meeting?
 - Internally developed reporting in addition to regulatory reports?
- ALM strategic indicators are established?
- ALCO reviews and decides on investments on quarterly basis?
- Benchmarks and limits set by Governance Board are in addition to regulatory measures for investments, liquidity risk, interest rate risk and FX risk?
- Liquidity Risk: Behavioral cash flow analysis includes projections? Stress testing completed? Liquidity contingency plan in place?
- Interest Rate risk: Gap analysis is completed? Interest rate change shocks and scenarios completed to understand change to net income.
- FX Risk: Gaps are measured and within acceptable range?

What is the goal of ALCO!

No Surprises

Thank you!

Upcoming Events

Date	Event
14 Mar, 1:00pm	Liquidity Risk Management (Webinar)
28 Mar, 1:00pm	Strategic Risk Management (Webinar)
4 Apr, 1:00pm	Effective Risk Management (Webinar)



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