LIQUIDITY RISK MANAGEMENT GUIDELINE

1. INTRODUCTION

The Central Bank of Barbados (Bank), in furtherance of its responsibility for the regulation and supervision of licensees under the Financial Institutions Act 1996-16 and the International Financial Services Act 2002-5, has developed this Guideline to provide guidance to licensees in relation to the Bank's expectations of their liquidity risk management practices.

Banking institutions which take short-term deposits and make comparatively long term loans face liquidity risk i.e. the risk that they may not be able to fund increases in assets or meet obligations as they fall due, without incurring unacceptable losses. This may be caused by a licensee's inability to liquidate assets or to obtain funding to meet its liquidity needs whether in normal or stressful conditions.

Liquidity problems can adversely impact a licensee's earnings and capital and, in extreme circumstances, can lead to the collapse of an otherwise solvent licensee. Such an event can have systemic consequences. Maintenance of liquid financial resources to meet liabilities as they become due, or liabilities that may become due earlier than expected, is therefore pivotal to the financial viability of every licensee and overall economic stability.

This Guideline, which is based on the principles outlined by the Basel Committee[1] provides a framework of policies and procedures that each licensee should have in place within its liquidity risk management programme. It is meant to provide a general best practice approach but the level of formality and sophistication of a liquidity risk management programme will depend on the size, nature and complexity of the licensee's activities. Licensees are therefore expected to adopt liquidity management practices that are applicable and appropriate for the type and complexity of their operations. This Guideline will form the basis of the Bank's assessment of the effectiveness of the liquidity risk management framework of licensees.

2. APPLICATION

This Guideline applies to all entities licensed under the Financial Institutions Act 1996-16 and the International Financial Services Act 2002-5. Licensees should ensure that, at a minimum, this Guideline is also implemented in their branches and subsidiaries abroad.
The Bank recognises that licensees that are part of banking groups may delegate the liquidity risk management function to their Head Office as part of group wide liquidity risk

[1] Basel Committee (2000) "Sound Practices for Managing Liquidity in Banking Organisations".

management. However, responsibility for compliance with the requirements of this Guideline remains with the licensee.

3. LIQUIDITY MANAGEMENT

The foundation of effective liquidity risk management includes an informed Board of Directors, capable management and appropriate staff, all having relevant expertise, and established well-documented efficient systems and procedures.

3.1 Board Oversight

The Board of Directors of each licensee is ultimately responsible and should, inter alia,

i. Approve the strategy towards daily and long-term liquidity management, including quantitative and qualitative targets, the significant policies[2] related to the day-to-day management of liquidity risk and the approach for dealing with temporary and long term liquidity disruptions;
ii. Review policies and procedures periodically, but at least annually;
iii. Approve a structure for the management of liquidity risk;
iv. Understand the liquidity risk profile of the licensee and the tools used by management to monitor and control liquidity risk;
v. Ensure appropriate information systems are introduced to facilitate the identification, measurement, monitoring and controlling of liquidity risk;
vi. Monitor on a regular basis the performance and liquidity risk profile of the licensee through periodic and timely reporting by management and internal auditors; and
vii. Review the Contingency Plan for handling disruptions to funding.

3.2 Role of Management

Each licensee should have a management structure in place to effectively execute the liquidity strategy. Senior management is responsible for overseeing the development, establishment and implementation of sound policies and procedures in keeping with the licensee's strategic direction and risk appetite as specified by the Board. Senior Management should:

i. Ensure that policies and procedures are well understood by personnel and are consistent with the Board's intent and that there is adherence to the lines of authority approved by the Board;

[2] See Section 4.1 for a summary of the policy framework.

ii. Establish, where necessary, a group[3] to oversee the licensee's operations relating to liquidity risk and, in particular, to ensure that the licensee has adequate funds to meet its obligations;
iii. Ensure the development, implementation and maintenance of management information and other systems that identify, measure, monitor and control the institution's liquidity risk;
iv. Oversee the establishment of effective internal controls over the liquidity risk management process, including review and assessment of the liquidity management programme by the internal audit function;
v. Report on the status of the liquidity management programme to the Board at least once a year or as warranted by the complexity of the institution; and
vi. Notify the Bank forthwith of any breaches of any prudential breaches of liquidity guidelines.

4. INTERNAL CONTROLS

Licensees should have an effective system of control for liquidity risk, including:

i. Documented policies and procedures for controlling risk;
ii. Processes for identifying and evaluating risk;
iii. Adequate information systems for monitoring risk; and
iv. Regular independent reviews of adherence to established policies and procedures.

4.1 Policies

Each licensee must document and implement domestic and foreign currency liquidity policies and procedures appropriate to the nature and complexity of their business. The policy should address the licensee's goal of protecting financial strength even for stressful events. All business units that conduct activities that affect liquidity should be aware of the liquidity policy framework and senior management should be aware of how other banking risks impact liquidity risk.

A licensee's liquidity management policy should at a minimum:

i. Provide clear guidance on the composition and role of the asset/liability committee or such other group responsible for managing liquidity;
ii. Establish approval processes to ensure adherence to liquidity risk management processes;
iii. Require periodic calculations to determine the extent to which the institution is funding long-term assets with short-term liabilities;

[3] Some licensees establish an asset/liability committee (ALCO) for this purpose.

iv. Establish liquidity ratio benchmarks, e.g. parameters for the funding of long-term assets with short-term liabilities to guide liquidity management and the method for computing liquidity indicators. See Section 4.3 for examples of liquidity ratios;
v. Establish limits on the degree of concentrations that are deemed acceptable. This should:

   a) Ensure diversification of funding by origin and term structure by, for example, guarding against concentration by individuals or groups of depositors, types of deposit instruments, market sources of deposit, geographical sources, term to maturity, and deposit currencies. Where concentrations occur, licensees need to manage their assets and liquidity profile to mitigate the risk; and
   b) Set procedures for the orderly restoration of the liquidity position in the event of loss of funding where such concentrations are unavoidable. In addition, the licensee should conduct an impact analysis on its dependency on any such concentrations. See Section 5 for details on contingency planning.

vi. Provide for periodic review of the deposit structure. The review should include the volume and trend of various types of deposits offered, maturity distributions of time deposits, interest rate paid on each type of deposit, prevailing market interest rate, limits on large time deposits, public funds, and non-resident deposits;
vii. Provide for the review of alternate funding sources including stand-by facilities and lines of credit;
viii. Establish a framework for the composition of assets;
ix. Assess the acceptable mismatch in combination with currency commitments. Licensees should also undertake separate analyses of their strategy for each currency individually. A licensee should, where appropriate, set and regularly review limits on the size of its cash flow mismatches over particular time horizons for foreign currencies in aggregate, and for each significant currency in which the institution operates;
x. Detail procedures for effectively managing domestic and foreign currency liquidity; and
xi. Establish procedures to be followed in the event of internal control breaches.

4.2 Identification of Liquidity Risk

To manage liquidity risk, licensees should:

i. Understand how their exposures to other risks may affect liquidity as liquidity risk and other inherent risks (e.g. credit, market, interest rate, operational, reputation and strategic) faced by licensees are not mutually exclusive and should not be considered in isolation. In fact, liquidity risk often arises as a consequence of these other risks. Any real or perceived problems associated with a licensee in relation to these risks may prevent it from obtaining funds at reasonable prices and thus increase its liquidity risk;

ii. Consider how existing activities may impact the liquidity risk profile in the future;
iii. Consider the implications of new products and services; and
iv. Be aware of how external influences may affect their liquidity position.

Sources of risk include where:

i. Inflows from the realisation of assets (either upon maturity or at the time of sale) are less than anticipated because of default risk or price volatility;
ii. There are significant concentrations within the asset portfolio (e.g. in relation to the distribution of exposures by counterparty, instrument type, geographical location or economic sector);
iii. There are concentrations in funding sources or changing market conditions on the funding structure;
iv. Access to standby or committed facilities given by other financial institutions to licensees is impeded by any covenants included in the facility agreement. Licensees should, if possible, regularly test access to the funds so as to determine the extent to which such facilities can be relied upon under stressed conditions;
v. Loan commitments given by licensees to their customer draw on liquidity. Licensees should be able to estimate and incorporate in their cash-flow projections the amount and timing of unused commitments (including those arising from mortgage loans, retail overdrafts and credit cards) that will possibly be drawn;
vi. The direction and amount of cash flows for derivatives, options and other contingent items are affected by market interest rates, exchange rates and other special terms under the contract. Licensees should estimate such cash flows with care, having regard to the nature of individual transactions and market conditions; and
vii. The unpredictable cash flow of the contingent liability embedded credit derivatives gives rise to liquidity demands. It is expected that licensees will undertake some scenario analysis to better establish the impact if the contingent liability is called upon.

4.3 Measurement of Liquidity Risk

Licensees should establish and maintain robust consistent methods for measuring liquidity risk. All licensees should calculate their liquidity positions (in all of the major currencies in which they deal, both individually and on an aggregate basis), on a day to day basis for the shorter time horizons and over a series of specified time periods thereafter, including for more distant periods, in order to enable them to effectively manage and monitor their net funding requirements.

Licensees[4] are required to submit on a quarterly basis the Maturity Gap Analysis return set out in Appendix 1, which represents a simple technique for the measurement of liquidity risk. A brief summary of this type of technique for monitoring net funding requirements may be found in Appendix 2, which also includes a note on the behavioural maturity of savings portfolios and its influence on maturity gap analysis.

The Bank will assess licensee's liquidity by expressing the net cumulative mismatches as percentages of total deposit liabilities. The Bank recognises that the size of mismatches will vary among licensees. While the maximum mismatch for sight to eight days must not exceed 0%, licensees are required to develop internal guidelines on mismatches at varying maturities. Licensees are required to report breaches of these limits immediately, with an explanation of the cause and the remedy to avoid future breaches.

For individual licensees, the Bank may complement these limits with target liquidity ratios. Management must remain conscious of the limitations of using ratios, as the ratio components may be inconsistent across periods and yield misleading comparisons. Such ratios must be interpreted in conjunction with qualitative information such as the likelihood of, for example:

a. Increased requests for early withdrawals;
b. Decreases in credit lines; and
c. Changes in transaction size.

Appendix 3 highlights some ratios that licensees may use in the analysis of liquidity risk.

4.4 Scenario Testing

Evaluating whether a licensee is sufficiently liquid depends greatly on the behaviour of cash flows under different conditions. Analyzing liquidity thus entails laying out "what if" scenarios. Scenarios should take into account factors that are both internal (institution specific) and external (market related). Scenario testing should also be among the measurement techniques used as part of its contingency planning process.

Licensees should test at least two scenarios, first in a going concern environment, i.e. in the ordinary course of business, and second, as if there is a "company specific crisis". However, where conditions are volatile, licensees are expected to test more than two types of scenarios.

The going concern scenario establishes a benchmark for the 'normal' behaviour of balance sheet related cash flows in the ordinary course of business. The licensee

[4] Non-third party deposit taking licensees that are managing their own funds are exempt from this requirement.

specific crisis remains confined to the company itself and provides one type of 'worst case' benchmark.

Under each scenario, a licensee should try to account for any significant positive or negative liquidity swings in cash flows and funding requirements that could occur.

4.5 Monitoring of Liquidity Risk

Licensees must establish and maintain appropriate systems for monitoring liquidity risk. Systems that produce liquidity reports should be linked to the licensee's core system and the data should reconcile with the licensee's financial data. The liquidity management framework should provide the Board, senior management and other appropriate personnel with timely information on the liquidity position of the licensee. These reports should indicate breaches of limits or when the licensee is approaching the limit and general compliance with the licensee's established policies and procedures.

Such systems need to be flexible enough to deal with various contingencies that may arise.

4.6 Internal Audit

Licensees should use an independent review process to:

i. Ensure that established policies and procedures are being followed;
ii. Ensure that procedures are achieving their objectives;
iii. Review the liquidity management process to identify any weaknesses; and
iv. Ensure prompt corrective actions are taken.

5. CONTINGENCY PLANNING

A licensee's ability to withstand both temporary and longer-term liquidity crises can depend on the adequacy of its formal contingency plans. Each licensee should therefore have in place a Board an approved contingency plan that addresses the strategy for handling liquidity crises, including procedures for making up cash flow shortfalls in emergency situations. Effective contingency plans should include:

i. Specific procedures to ensure timely and uninterrupted information flows to senior management;
ii. Clear divisions of responsibility within management in a crisis;
iii. Action plans for altering the composition of assets and liabilities (i.e. market assets more aggressively, sell assets intended to be held, raise interest on deposits etc.);

iv. An identification of back-up sources of funding, including unused credit lines, the circumstances in which they can be accessed, the amount expected and the priority attached to each alternative source of funds (i.e. designate primary and secondary sources of liquidity);
v. A classification of borrowers and trading customers according to their importance to the institution in order to maintain customer relationships; and
vi. Plans and procedures for communicating with the media.

Licensees must be careful not to rely excessively on back-up lines and need to understand the various conditions, such as notice periods, that could affect their ability to access such lines quickly. Indeed, licensees should have contingency plans for times when their back-up lines become unavailable.

6. REPORTING REQUIREMENTS

The Bank will monitor licensees on an ongoing basis to ensure that liquidity risk is being managed appropriately based on the nature and complexity of their business activities and operating environment. The Bank will encourage regular dialogue with entities to further understand their liquidity management practices. As part of this process, licensees are required:

i. To submit a copy of their liquidity management policy
ii. To submit on a quarterly basis the attached regulatory return - Maturity Gap Analysis[5];
iii. To submit on a yearly basis an analysis of the behavioural maturity of their savings portfolio including any assumptions made; and
iv. To advise the Bank of breaches in internal limits or of any concerns about current or future liquidity and the strategies to address such concerns.

[5] Non-third party deposit taking licensees are exempt from this requirement.

Appendix 1

MATURITY GAP ANALYSIS

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		Sight - 8 days	8 days - 1 Month	1-3 Months	3 - 6 Months	6 - 12 Months	1 - 2 Years	2 - 5 Years	Over 5 Years	Non-Interest Sensitive (Assets and Liabilities)	Total
ASSETS											
1	Cash										0
2	Due From										0
3	Investments										0
4	Commercial Bills Discounted										0
5	Loans										0
6	Other Foreign Assets										0
7	Fixed Assets										0
8	Other assets										0
9	**Total earning assets or Risk-sensitive assets (RSA)**	0	0	0	0	0	0	0	0	0	0
LIABILITIES & EQUITY											
10	Due to										0
11	Demand Deposits										0
12	Savings Deposits										0
13	Time Deposits										0
14	Loans										0
15	Fixed Income Obligations										0
16	Other Foreign Liabilities										0
17	Other Liabilities										0
18	Shareholders Equity										0
19	**Total interest-bearing liabilities or risk-sensitive liabilities (RSL)**	0	0	0	0	0	0	0	0	0	0
20	Off-balance sheet items										0
GAP MEASURES											
	RSA - RSL (cumulative gap / liabilities)	0	0	0	0	0	0	0	0	0	
	RSA / RSL										
	Gap / Earning assets										

Bank Supervision Dept., Central Bank of Bdos

Appendix 2

Maturity Mismatch Approach

Licensees may utilise a maturity mismatch approach to measure their liquidity risk. This approach calculates the net mismatch between inflows and outflows in various time-bands. Mismatches are measured on a net cumulative basis by adding the net mismatches in each successive time band as illustrated in the table below.

Table 1

Sight – 8 days	Sight – <1 month	Sight to < 3-Months	Sight to < 6-Months	Sight to < 12-Months	Sight – 5 Years	Sight-Over 5 Years

In making an estimate of cash flows, licensees should consider:

i. The behavioural maturity and not only the contractual maturity of cash flows, as many cash flows associated with various products are influenced by interest rates and/or customer behaviour;
ii. The seasonality or cyclicality of cash flows; and
iii. The impact of the economic and business cycle on liquidity.

Licensees are required to submit the regulatory return at Appendix 1 to the Bank on a quarterly basis. Licensees should:

i. Allocate each cash inflow or outflow to a given calendar date from a starting point, usually the next day. Licensees are required to disclose all assumptions about the starting point and clearing and settlement conventions;
ii. Stratify all of a licensee's assets, liabilities and off-balance sheet instruments into time bands based on their next re-pricing or maturity date, whichever is shorter;
iii. Separately identify cash flows by domestic currency and foreign currency;
iv. Enter certain non-interest bearing liabilities, such as demand deposit accounts, under the appropriate column even though such deposits do not bear an explicit rate of interest or maturity;[6] and
v. Use conservative estimates of when credit lines can be drawn down. Similarly, cash outflows can be ranked by the earliest date a liability holder could exercise an early repayment option, or the earliest date contingencies can be called.
vi. Disclose assumptions that are based on past experience.

[6] The "maturity" or run-off of such deposits may require replacement with interest-bearing funds and hence exposes the bank to interest rate risk.

vii. Report assets and liabilities with embedded options that grant the right, but not the obligation to sell an asset or repay a liability under the time bank in accordance with their contractual maturity or next re-pricing date. For instance, an investment in a debt security maturing in 5 years with a put option (option to sell) in 1 year should be reported under the 5-year time band except where management has firmly decided that it will exercise its option in 1 year. In such circumstances, the investment should be reported under the 1-year time band.

The difference between cash inflows and cash outflows in each time band produces an excess or deficit of funds/net gap position or (re-pricing imbalance) for each time band. This gap serves as a starting-point for a measure of a licensee's future liquidity position.

Non-Interest Sensitive (Assets and Liabilities)
Balances for all non-interest sensitive assets and liabilities i.e. those that are not directly responsive to changes in interest rates should be reported under this column. For instance, balances relating to all non-financial assets and impaired loans ("non-performing" & "non-accrual" assets) are to be entered in this column. The licensee's shareholder equity should also be reported in this column.

Behavioural Maturity
Many cash flows associated with various products offered by financial institutions are influenced by customer behaviour. This is especially relevant with licensees' savings portfolios, which in most cases are contractually available at call and therefore considered to be very volatile liabilities.

However, experience has shown that a portion of a bank's savings portfolio may be stable/sticky with a low probability of withdrawal. Determination as to how much of a deposit portfolio is "stable" must be estimated by licensees by, inter alia, reviewing historical behaviour of customer deposits while paying attention to prevailing economic conditions of the time under review. Such data would help to inform:

i. How to appropriately classify certain deposits into the maturity buckets of the gap analysis; and
ii. Estimates of future behaviour and sensitivity of savings bank deposits to changes in market variables.

Appendix 3

Liquidity Ratios

Liquid Assets to Short Term Liabilities

The Liquid Assets to Short Term Liabilities provides a measure of the assets available to meet current obligations. The liquid assets ratio is computed as the sum of a licensee's liquid assets (assets that are readily convertible to cash or can be sold quickly without significant loss) in all currencies expressed as a percentage of the sum of its short-term liabilities (deposits and other liabilities maturing within 90 days).

Liquid assets may include:

i. Foreign Cash.
ii. Excess Cash Reserves.
iii. Excess Government Securities.
iv. Cheques & Other items.
v. Short term receivables.

Short term liabilities may include:

i. Demand Deposits.
ii. Savings Deposits (portion considered volatile based on behavioural maturity analysis).
iii. Volatile (maturing up to 3 months) time deposits.
iv. Cheques Outstanding.
v. Short term payables.

Liquid Assets to Total Assets

The Liquid Assets to total assets ratio provides an indication into the liquidity available to meet expected and unexpected demands for cash. It gives insight into how much balance sheet shrinkage the licensee can absorb before being forced to sell illiquid assets.

Loans to Deposit

The loans to deposit ratio provides a simple measure of the extent to which a licensee is funding its illiquid asserts (such as loans) by relatively stable liabilities (such as customer deposits). It provides an indication of over-expansion in the loan book and of the extent to which a licensee's liquidity is vulnerable to an impairment in asset quality and is particularly relevant where a licensee relies on retail funding.