INTEREST RATE RISK IN THE BANKING BOOK 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[1] on the minimum policies and procedures that each licensee needs to have in place and apply in the management of interest rate risk.

Interest rate risk (IRR) is the risk that a licensee will face adverse changes in its earnings and/or its capital base as a result of changes in the absolute level of interest rates, in the spread between rates, in the shape of the yield curve or in any other interest rate relationship.

IRR is a key component of the intermediary process and it can be derived from a variety of sources. The four primary sources are:

a. Re-pricing risk which results from mismatches in the re-pricing of assets and liabilities which are of different maturities and are priced off different interest rates;
b. Yield curve risk which results from unanticipated shifts in slope and shape of the yield curve;
c. Basis risk which arises from the imperfect correlation in the adjustment of interest rates among two or more rate indices; and
d. Optionality risk which results from the changing of market interest rates causing a change in the amounts or timings of cash flows to be received from an instrument with an imbedded option component, in turn impacting negatively on the earnings or capital of the licensee.

For regulatory purposes, IRR can be divided into two components, traded interest rate risk and non-traded interest rate or interest rate risk in the banking book. Traded interest rate risk is relevant to licensees that are involved in trading activities and a capital charge is generally applied to trading book interest rate risk exposures[2]. IRR in the banking book arises from the core banking activities of licensees. Although it can be considered one of the largest risks faced by licensees there is no specific capital charge.

[1] This Guideline is based on the Basel Committee on Banking Supervision (2004) “Principles for the Management and Supervision of Interest Rate Risk”. It should be read in conjunction with the companion Guidelines on Managing Market Risks, Liquidity Risk Management, Measuring Capital Adequacy for Market Risks, and Stress Testing.
[2] For guidance on the measurement of traded interest rate risk, refer to the Guideline on Measuring Capital Adequacy for Market Risks.

Excessive interest rate risk-taking in the banking book and/or poor management of this risk has the potential to severely undermine a licensee's earnings and the stability of its capital. The main source of this type of interest rate risk is usually re-pricing risk but fee income which is sensitive to market interest rates may also be a source of banking book interest rate risk exposure.

Licensees need therefore to establish comprehensive IRR management programmes to cover risks in both the trading and banking books. This Guideline sets out the Bank's expectations in relation to managing the potential exposure, recognising that licensees will differ with respect to their risk appetite and risk management practices and that factors such as the institution's size and the nature and complexity of activities will have significant bearing on the risk management framework.

The management of interest rate risk cannot be conducted in isolation from the management of other risks or asset/liability management considerations, such as the requirement to maintain adequate liquidity. As such, licensees should incorporate the management of IRR into their overall risk management framework and evaluation of the level of capital required to support their activities.

2. APPLICATION

This Guideline applies to entities licensed under the Financial Institutions Act 1996-16 and the International Financial Services Act 2002-5 and should be applied on a solo and consolidated basis. However, while IRR monitoring should include exposures in subsidiaries, licensees should also be alerted to the fact that the consolidated risk measure may understate risk when positions in one affiliate are used to offset positions in another affiliate.

Given the differences in risk profiles of licensees, the Bank anticipates differences in the application of this Guideline as licensees design risk management frameworks appropriate to the size and complexity of their institutions.

Licensees need to ensure that their overall interest rate risks are properly monitored and managed, whether these arise from trading book or banking book positions. Where licensees are required to report separately on their market risks, they need to look additionally under this Guideline at interest rate risks occurring in the banking book; where licensees are able to take advantage of the de minimis exemption from market risk reporting, it is important to ensure that interest rate risk monitoring covers risks throughout the bank's operations.

Licensees should submit the internal reports generated and used to monitor IRRBB. However, the Bank reserves the right to require additional reporting to assess the trading and non-trading activity for the purpose of ongoing monitoring and assessment.

3. RISK MANAGEMENT FRAMEWORK

A robust IRR management program should have, at a minimum, effective oversight, appropriate policies and procedures to identify, measure, monitor and control interest rate exposures.

3.1 Governance and Oversight

Key to the successful management of interest rate risk is effective oversight by the Board and Senior Management. Licensees are advised that, inter alia,

a. The Board should review and approve interest rate risk management policies and procedures at least once a year but more frequently, if necessary;
b. The Board should identify lines of responsibility and authority for monitoring and managing IRR;
c. The Board should ensure that management implements effective measures to identify, measure, monitor and control IRR;
d. The Board or a suitable committee of the Board should review regular and timely reports on compliance with Board-approved policies;
e. The Board should assess the risk inherent in new products and services and ensure that these are subject to adequate procedures and controls prior to their introduction;
f. The Board should ensure that there is an independent review/audit of the interest rate risk management function;
g. The Board should ensure that there is qualified and competent management and that there are adequate resources devoted to the IRR management function;
h. Senior management should translate the policies and procedures into operating standards that are consistent with the Board's goals and objectives;
i. Senior Management should review periodically the organisation's IRR management policies and procedures to ensure they remain appropriate and sound;
j. Senior management should ensure that the policies and standards are well communicated and understood and adhered to;
k. Senior management should establish adequate internal controls over the IRR management process including adequate segregation of duties; and
l. Senior management should ensure that there is an appropriate management information system to identify, measure and control risks and facilitate compliance with the Board-approved policy.

3.2 Risk Management Policies and Procedures

Risk management policies and procedures, including the methodology chosen for measurement and assessment, should be clearly documented to ensure that risk management objectives are achieved. Policies should:

a. Establish lines of responsibility and accountability over IRR management;
b. Identify the types of instruments and activities that can be used to manage interest rate exposure and the limits structure for instruments, portfolios, business units etc.; and
c. Identify approval processes, including for exceptions to policies and limits and, where necessary, establish triggers governing the escalation of issues to the Board.

3.2.1 Interest Rate Limits

Licensees should set clear boundaries for the level of IRR they are prepared to accommodate over a range of possible changes in interest rates. These limits should reflect the size, complexity and capital adequacy and the ability to measure and manage the risk. The level of detail for limits should reflect the characteristics of the licensee's holdings, including the various sources to which the licensee is exposed.

Limits may be based on capital levels, earnings, performance, economic value and risks tolerances, as well as against counterparties or any combination of factors as is necessary to govern the activities of the particular licensee. For licensees engaged in traditional banking activities, simple limits on the extent of holdings may be adequate. However, for more complex licensees, more detailed limits may be needed. Considerations include:

a. The extent to which floating rate exposures are funded by fixed rate exposures and vice versa and the acceptable level of basis risk permitted; and
b. The maximum allowable volatility in earnings and net worth acceptable as a result of possible changes in market interest rates.

Limits on interest rate risk should be related to explicit stress scenarios of changes in market rates, within specified ranges. These ranges should reflect genuine stress conditions and should be developed based on the historical rate volatility and market depth factors such as the length of time need to unwind, restructure or hedge a position. Scenarios should also cover as far as possible as many sources of interest rate risk as licensees can potentially face.

3.2.2 Use of Hedging Techniques

The use of hedging techniques is one means of managing and controlling interest rate risk. Different financial instruments may be used for hedging purposes, including, interest rate future contracts, interest rate options and interest rate swaps. Each licensee needs to consider which instruments and techniques are appropriate for the nature and extent of its interest rate risk activities and the capacity of the interest rate risk reporting and control systems.

3.3 Interest Rate Risk Measurement, Monitoring and Control

It is critical that licensees measure and monitor and control their rate exposure. Measurement systems should capture all significant sources of risk and evaluate the impact of changes on critical base variables such as earnings and/or economic value. Measurement systems should also be capable of flagging excessive exposures.

At a minimum, measurement systems should:

a. Provide management with an integrated view of interest rate risk exposure across the full business of the licensee (trading and non-trading books);
b. Provide a meaningful and accurate measurement of all sources of material IRR;
c. Provide accurate and timely data inputs on current positions, and their relationship to agreed limits;
d. Document key assumptions, parameters and limits;
e. Assess exposures across different currencies; and
f. Cover all significant sources of risk.

A brief summary of techniques used to measure interest rate exposures and their limitations may be found in **Appendix 1**. Licensees need to determine the particular measurement techniques that are appropriate for their business. At a minimum, the Bank normally expects licensees to develop a suitable form of gap analysis in assessing the interest rate risk to current earnings as well as the potential risk to economic value.
The use of a vendor based risk measurement and management tool does not release licensees from their obligation to have adequate documentation including the documentation of the underlying assumptions and, if applicable, model parameters. Additionally, if vendor based tools/models are used, licensees must demonstrate that they fully understand the inputs and outputs of the tool/ model.

3.3.1 Interest Rate Risk Monitoring and Reporting

Reporting of risk measures should be done regularly for review by senior management and the Board, incorporating comparisons with current exposure to policy limits. At a minimum, reports should include:

a. Summaries of the licensee's exposures;
b. Assessments of compliance with policies and limits;
c. Key assumptions;
d. Results of stress tests; and
e. Summaries of findings of reviews of interest rate management by consultants, auditors etc.

3.3.2 Stress Testing

Licensees should measure their vulnerability to loss in stressed market conditions, including the breakdown of key business assumptions and parameters. These findings should inform the reviewing policies and limits. Licensees should refer to the Stress Testing Guideline for further guidance. Consideration should be given to 'worst case' scenarios in addition to more probable events.

3.3.3 Internal Audit

A licensee's interest rate risk measurement and reporting system should be subject to regular independent review of its effectiveness. Where internal audit carries out this role, it should, inter alia, review and validate:

a. The major assumptions used in the risk measurement process;
b. The adequacy of the compliance with the internal controls system governing interest rate exposure;
c. The appropriateness of the risk measurement system for the risk profile of the institution;
d. The accuracy and completeness of the data inputs in the licensee's risk measurement system;
e. The soundness of the risk measurement calculations and forecasts; and
f. The reasonableness of the scenarios and stress events used.

4. THE ROLE OF THE BANK

The Bank needs to be satisfied that each licensee has in place effective and appropriate arrangements for measuring, monitoring and controlling interest rate risk. The Bank will review licensee's systems and procedures to ensure that they meet the basic requirements.

As part of its review of this area the Bank will:

a. Monitor on an ongoing basis the impact of interest rate changes on an institution’s performance and/or economic value; and
b. Assess the appropriateness of the management system and the level of compliance with the stated objectives.

Factors that will be considered include:

a. Assessing the complexity and level of risk faced by the licensee;
b. The extent to which management assesses the overall risk in the institution (trading and non- trading activities);
c. The adequacy of Board and senior management oversight;
d. The level of compliance with this guideline and the licensee’s interest rate risk policies;
e. The adequacy and effectiveness of the internal measurement, management information systems, and controls;
f. The allocation of economic capital against this risk;
g. The appropriateness and quality of the internal audit review; and
h. The suitability of hedging and other interest rate strategies.

The Bank is still considering what approach it should take in collecting licensees' interest rate risk data. One option would be to create a new standard reporting form under which each licensee would be required to calculate and report regularly their interest rate gap analysis, on the basis of common definitions, probably as at the end of each calendar quarter. Alternatively, it may be possible for the Bank to base its analysis and review on a licensee's own internal management reporting of interest rate risk where it can be satisfied that adequate management reporting is in place. The latter scenario would potentially avoid the need for banks to complete and submit new standard reports. At the same time, by reviewing existing management reports, the Bank would potentially be better placed to assess the effectiveness of their procedures for dealing with these important risks. However, it would of course also be the case under this scenario that, in individual cases, the Bank might require additional interest rate risk reports to be submitted where it was concerned that existing management reporting was inadequate or unsuitable for the business that is conducted. At a minimum, the Bank expects licensees to closely monitor observed changes in interest rates and to keep under review the effect of an upward or downward 200 basis point parallel shift in the yield curve.

Appendix 1

INTEREST RATE RISK MEASUREMENT TECHNIQUES

Various techniques exist for measuring the potential impact of IRR in the banking book. Some give a short term focus on the earnings impact while others have a longer term focus on economic value. Techniques also differ in relation to their ability to evaluate complex portfolios and assess the various forms of risk. This appendix focuses on some of the gap analysis techniques which distribute interest sensitive assets, liabilities, and off-balance sheet positions into predefined time-bands according to their maturity (fixed rate instruments) or time remaining to their next re-pricing (floating rate instruments).

A simple gap analysis measures the difference between the amount of interest-earning assets and interest-bearing liabilities that re-price in a particular time period. The Gap analysis worksheet shows the maturity and re-pricing schedules for all of the licensee's earning assets and interest-bearing liabilities. Comparing the value of assets that mature or re-price at each point in time with the value of the liabilities that mature or re-price reveals the exposure of earnings to changes in interest rates. Multiplying the gap by an assumed change in interest rate yields an approximate change in net interest income resulting from the interest rate movement.

a. A negative or liability-sensitive gap occurs when interest-bearing liabilities exceed interest-earning assets for a specific or cumulative maturity period. This means that an increase in interest rates can cause a decline in net interest income; and
b. A positive or asset-sensitive gap occurs when interest-earning assets exceed interest-bearing liabilities. This means that a decrease in interest rates can cause a decline in net interest income.

While useful, the gap technique has limitations as it gives a static measure, i.e.:

a. It ignores the variations in the re-pricing time of instruments within the same time band and so increases the estimation error; and
b. It does not incorporate the impact of basis risk, embedded options, and non-interest revenue.