



FOREIGN EXCHANGE AND SETTLEMENT 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 on the management of foreign exchange and settlement risks which apply to positions in both the trading and banking books of licensees.

Foreign exchange risk is the possibility of financial loss to an institution arising from adverse movements in foreign exchange rates during a period in which it has an open position. The amount at risk is a function of the magnitude of potential exchange rate changes and the size and duration of the foreign currency exposure. Owing to this, foreign exchange transactions give rise to the issue of settlement risk i.e. the risk of financial loss to a licensee in a foreign exchange transaction when it pays the currency it sold but does not receive the currency it bought. This risk implicitly involves both credit risk and liquidity risk.

The Guideline sets out the Bank's expectations in relation to the minimum policies and procedures that each licensee should have in place and apply as it relates to its foreign exchange and settlement risk program, while taking account of the licensee's size, and the nature and complexity of its activities. Together with its companion Guidelines,¹ it should provide licensees with a sound basis for building their risk management framework to govern market risks.

Although this document focuses on the responsibility of the licensee for managing foreign exchange risk, it is not meant to imply that management of this risk can be conducted in isolation from other risks or asset/liability management considerations. For example, maturity mismatches between foreign currency positions represent a source of liquidity risk. Foreign exchange settlement risk has an inherent credit risk associated with the default by a counterparty while such default may also trigger liquidity problems. The tolerance of each licensee to any one risk will vary with other risks and the licensee's ability to absorb potential financial losses. As such, licensees should incorporate the level of foreign exchange risk into their overall evaluation of capital adequacy. In addition, since settlement risk is a two-way process, licensees should seek to minimise the possibility that they are the cause of settlement failures.

¹ Stress Testing Guideline 2007:04
Managing Market Risks Guideline (Forthcoming)
Measuring Market Risks Guideline (Forthcoming)
The Management and Measurement of Interest Rate Risk in the Banking Book Guideline (Forthcoming)



2. APPLICATION

The principles in this Guideline are applicable to all entities that operate under the Financial Institutions Act 1996-16 and the International Financial Services Act 2002-5. They are intended for use at both the consolidated and subsidiary level but their specific application will depend on the complexity and range of activities undertaken by individual licensees.

3. FOREIGN EXCHANGE AND SETTLEMENT RISK MANAGEMENT

In general, foreign exchange risk arises from two factors: currency mismatches in an institution's assets and liabilities (both on and off-balance sheet) and currency cash flow mismatches. Such risk continues until the foreign exchange position is covered. This risk may arise from a variety of sources such as foreign currency retail accounts and retail cash transactions and services, foreign exchange trading, investments denominated in foreign currencies and investments in foreign companies.

Managing foreign exchange risk is a fundamental component in the safe and sound management of all licensees that have exposures in foreign currencies. It involves prudently managing foreign currency positions in order to control, within set parameters, the impact of changes in exchange rates on the financial position of the licensee. The frequency and direction of rate changes, the extent of the foreign currency exposure and the ability of counterparts to honour their obligations to the licensee are significant factors in foreign exchange risk management. Apart from counterparty default, foreign exchange settlement failures may arise from operational problems, market liquidity etc.

The licensee's exposure to this risk equals the full amount of the currency purchased and lasts from the time a payment instruction for the currency sold can no longer be cancelled unilaterally until the time the currency purchased is received in finality. It should be noted that foreign exchange settlement risk has more to do with the size and duration of the exposure as opposed to the probability of the occurrence of an actual loss.

Although the particulars of foreign exchange risk management will differ among licensees depending upon the nature and complexity of their foreign exchange activities, a comprehensive foreign exchange risk management program requires:

- a. Effective oversight by the Board of Directors (Board) and Senior Management.
- b. Sound and prudent foreign exchange risk management policies; and
- c. Appropriate and effective foreign exchange risk management and control procedures.

3.1 Board of Directors

Effective oversight by the licensee's Board and senior management is critical for sound foreign exchange risk management practices. The Board is ultimately responsible for its exposure to foreign exchange risk and the level of risk assumed. The Board needs to ensure that any foreign exchange risk management policy developed by management adequately puts



processes and procedures in place to measure, manage and control all aspects of foreign exchange risk. To this end, the Board should at a minimum:

- a. Review and approve foreign exchange and settlement risk management policies and procedures. This review should occur at least once a year;
- b. Set limits and risk tolerances. Limits should be reviewed at least annually, including those in relation to the volatility of the currencies, large exposures to counterparties and changes in the credit worthiness of counterparties;
- c. Ensure that there is an independent review/audit of the foreign exchange operations and that the scope and frequency of the programme is appropriate to the foreign exchange and settlement risks;
- d. Ensure the selection and appointment of qualified and competent management to administer the foreign exchange function; and
- e. Review and assess foreign exchange risk reports to ensure that the nature and size of exposure are maintained at prudent levels and are consistent with available capital.

3.2 Senior Management

The licensee's procedures for managing foreign exchange risk should be commensurate with the range and scope of its activities. The management of each licensee is responsible for managing and controlling the exposure to foreign exchange risk in accordance with the foreign exchange risk management program. Although specific foreign exchange risk management responsibilities may vary across licensees, large and/or complex licensees should have Asset Liability Management type committees responsible for the design and administration of their foreign exchange risk management programmes. Senior management should at a minimum:

- a. Develop and document appropriate foreign exchange and settlement risk management policies for approval by the Board;
- b. Ensure that foreign exchange risk is managed and controlled within the foreign exchange risk management program. Particular attention should be paid to identifying the risks inherent in new services and products and establishing adequate procedures and controls before start-up;
- c. Develop and implement techniques that will accurately and continually measure the institution's exposure to foreign exchange risk and its foreign exchange gains and losses;
- d. Have clear procedures for measuring and managing exposures to individual counterparties across the group;
- e. Implement an appropriate accounting and management information system that can aggregate foreign exchange risks and exposures arising from the operations of various business functions;
- f. Develop a framework of limits to control foreign exchange risk exposures for differing levels of seniority for both management and traders;
- g. Ensure effective segregation of duties between trading, risk measurement and monitoring, settlement and accounting functions;
- h. Establish and implement procedures governing the conduct and practices of foreign exchange traders;



- i. Provide training to all staff involved in the foreign exchange management process;
- j. Develop lines of communication to ensure the timely dissemination of the foreign exchange policies and procedures to all individuals involved in foreign exchange activities and the foreign exchange risk management process;
- k. Develop procedures for informing key counterparties when significant operational problems arise;
- l. Develop a Contingency Plan and carry out stress testing; and
- m. Report comprehensively on foreign exchange risk activities to the Board based on the frequency prescribed by the Board. The Board should be advised promptly of large losses arising from foreign exchange risk or the possibility of such losses.

3.3 Foreign Exchange Risk Management Policies

Policies should set out the objectives of the institution's foreign exchange risk management strategy and the parameters within which this strategy is to be controlled. These policies should include:

- a. A statement of risk principles and objectives governing the extent to which the licensee is willing to assume foreign exchange risk;
- b. Explicit and prudent limits on the licensee's exposure to foreign exchange risk;
- c. Clearly defined levels of delegation of trading authorities; and
- d. A contingency plan and a framework for stress testing.

3.3.1 Objectives

Each licensee needs to decide in the context of its foreign exchange risk tolerance what are the objectives of its foreign exchange risk management program. This tolerance should not be assessed in isolation since it will vary with the extent of other risks (for example credit risk, liquidity, interest rate risk, operational risk) and the adequacy of its capital to absorb potential losses. The aim of the foreign exchange risk management is not necessarily to completely eliminate the licensee's exposure to changes in exchange rates or the size or duration of settlement exposures, but to minimize the impact of adverse occurrences that could result in financial loss.

3.3.2 Foreign Exchange Limits

Each licensee needs to establish explicit and prudent foreign exchange limits, and ensure that the level of its foreign exchange risk exposure does not exceed these limits. Where applicable, these limits, applied at consolidated and subsidiary levels, need to cover:

- a. The currencies (and maturities) in which the licensee's can incur exposure;
- b. The level of foreign currency exposure that the licensee is prepared to assume as a market maker or on behalf of its customers;
- c. The credit risk limitations on the licensee's counterparties and intermediaries; and
- d. The permissible size of contracts with individual counterparties.



Foreign exchange risk limits need to be set within the licensee's overall risk profile. Authorised currencies will normally include currencies in which the licensee may be called on to settle foreign exchange transactions. These are usually the currencies in which the licensee or its customers conduct business.

Limits on foreign exchange exposure should reflect both the specific foreign currency exposures that arise from daily foreign currency dealing or trading activities (transactional positions) and those exposures that arise from the overall asset/liability infrastructure, both on and off-balance sheet (structural or translational positions).

The establishment of aggregate foreign exchange limits that reflect both foreign currency dealing and structural positions help to ensure that the size and composition of both positions are appropriately and prudently managed and controlled and do not overextend a licensee's overall foreign exchange exposure.

Usually, risk limits are established in terms of a relationship between the foreign exchange position and earnings or capital, or in terms of foreign exchange volume, such as total dollars or numbers of transactions.

Foreign exchange settlement failures can arise from counter party default. It is crucial, therefore, that prudent limits to control the settlement risk of individual counterparties are in place. Counter parties should be subjected to a credit evaluation to determine the maximum exposure that the licensee is willing to accept. Limits should be based on the level of credit risk that is prudent and should not be set at an arbitrary, high level just to facilitate trading with counter parties.

Although the overall assessment of foreign exchange counterparties is an integral component of any foreign exchange operation, this may be conducted by the licensee's credit risk management function, thus obviating the need for separate counterparty assessment by the foreign exchange operations. Counterparty settlement limits should be subject to the same procedures used for determining limits on other exposures of similar size and duration to the counter party. Additionally, any planned excesses of settlement limits should be subject to approval by the appropriate credit management personnel in advance of the excess occurring.

All types of foreign exchange and settlement risks limits need to be reassessed on a regular basis to reflect potential changes in exchange rate volatility, the institution's overall risk philosophy and risk profile.

3.3.3 Delegation of Authority

Clearly defined levels of delegated authority help to ensure that foreign exchange positions do not exceed the limits established under the licensee's foreign exchange risk management policies. Developing a framework of limits to control foreign exchange risk exposures should be established for differing levels of seniority for both management and traders. Authorities may be absolute, incremental or a combination thereof, and may also be individual, pooled, or shared within a committee.



The delegation of authority needs to be clearly documented, and must include at a minimum:

- a. The absolute and/or incremental authority being delegated;
- b. The units, individuals, positions or committees to whom authority is being delegated;
- c. The ability of recipients to further delegate authority; and
- d. The restrictions, if any, placed on the use of delegated authority.

The extent to which authority is delegated will vary among licensees according to a number of factors including:

- a. The licensee's foreign exchange risk philosophy;
- b. The size and nature of a licensee's foreign exchange operations; and
- c. The experience and ability of the individuals responsible for carrying out the foreign exchange risk management activities.

3.3.4 Contingency Planning and Stress Testing

Contingency planning should be an integral part of licensees' foreign exchange and settlement risks management processes. Each licensee should:

- a. Document in its Business Continuity Plan general procedures and processes for the continuity of its foreign exchange operations in the event that the main area becomes unusable;
- b. Negotiate service level agreements with its vendors to the extent that these vendors provide services that are critical to the licensee's foreign exchange and settlement operations;
- c. Incorporate in the contingency plan specific procedures for reacting in a prompt and balanced manner to failed transactions or other settlement problems to:
 - i. ensure timely access to key information, such as payments made, received or in process; and
 - ii. obtain information and support from correspondent institutions; and
- d. Test the plan periodically to assess its adequacy.

Licensees should measure their vulnerability to loss arising from their foreign exchange operations and liquidity squeeze under stressed market conditions. They should evaluate their capacity to withstand stressed situations in terms of profitability, liquidity and capital adequacy.

At a minimum, the stress tests should:

- a. Cover major currencies to which the licensee is exposed;
- b. Assess the effects of large exchange rate movements, including a sharp reduction in liquidity, of individual currencies; and
- c. As it relates to settlement risk, include settlement delay, individual counterparty failures and disruption to the payment system.



The stress scenarios should be commensurate with the nature of the licensee's portfolios and risks involved. Additionally, licensees should take into account the stress-testing results when evaluating their capital adequacy and reviewing their business strategies, policies and limits for foreign exchange risk.

4. Foreign Exchange Risk Management

Each licensee engaged in foreign exchange activities is responsible for developing, implementing and overseeing procedures to manage and control foreign exchange risk and settlement risk in accordance with its foreign exchange risk management policies. These procedures must be at a level of sophistication commensurate with the size, frequency and complexity of the licensee foreign exchange activities.

Foreign exchange risk management procedures need to include, at a minimum:

- a. Accounting and management information systems to measure and monitor foreign exchange positions, foreign exchange risk, settlement risk and foreign exchange gains or losses;
- b. Controls governing the management of foreign currency activities; and
- c. Independent inspections or audits.

4.1 Risk Measurement

Managing foreign exchange risk requires a clear understanding of the amount at risk and the impact of changes in exchange rates on this exposure. At a minimum, each licensee should have in place monitoring and reporting techniques that measure:

- a. All foreign exchange risk by maturity, on both a gross and net basis;
- b. The net spot and forward positions in each currency or pairings of currencies in which the licensee is authorised to have exposure;
- c. The aggregate net spot and forward positions in all currencies;
- d. The period of irrevocability for each currency (**see below**);
- e. Transactional and translational gains and losses relating to trading and structural foreign exchange activities and exposures; and
- f. Limit excesses and unusual settlement activity.

The amount of risk is a function of the magnitude of potential exchange rate changes and the size and duration of the foreign exchange exposure. The duration of the foreign exchange exposure starts when a payment order for the currency sold can no longer be recalled or cancelled with certainty i.e. the unilateral payment cancellation deadline and lasts until the currency purchased is received with finality (this interval is known as ***the period of irrevocability***). It is critical, therefore, that licensees are able to accurately measure their exposure to foreign exchange risk, including settlement risk.



To measure and manage their foreign exchange exposures, licensees need to be certain of the unilateral cancellation deadline as operational and even legal arrangements typically result in payment orders becoming effectively irrevocable significantly before the time of payment. **(See Appendix 1)** Licensees need to know the latest time the correspondent can guarantee to satisfy a cancellation request and, therefore, the cancellation cut-off time should be stipulated in the terms and conditions of a correspondent's service agreement.

A licensee's minimum foreign exchange settlement exposure at a specified time is equal to the value of all outstanding trades where payment is irrevocable plus any known failed receipts. Since the irrevocable period can last several days, this minimum measure of exposure may be equal to several days' worth of trades. Consequently, the maximum settlement exposure at a specified time equals the minimum exposure plus the value of all uncertain receipts at that time.

To effectively measure and control current and future foreign exchange exposures, it is critical that the licensee recognises the changing status and hence the changing potential settlement exposure of each of its trades during the settlement process.

Licensees should record and report accurate and timely information on exchange transactions and currency transfers. This may be achieved through an effective accounting and management information system that should record and measure its foreign exchange exposures as well as the impact of potential exchange rate changes on the licensee.

4.2 Control of Foreign Exchange Activities and Settlement

Controls over foreign exchange activities provide safeguards to protect against potential losses by ensuring that unauthorised exposure does not occur and that foreign exchange activities are conducted according to the policies and procedures.

Although the controls over foreign activities will vary among licensees depending on the nature and extent of their foreign exchange activities, the key elements of any foreign exchange control program are well-defined procedures governing:

- a. Organizational controls to ensure that there exists a clear and effective segregation of duties between those persons who:
 - i. Initiate foreign exchange transactions; and
 - ii. Are responsible for operational functions such as arranging prompt and accurate settlement, and timely exchanging and reconciliation of confirmations, or account for foreign exchange activities.

- b. Procedural controls to ensure that:
 - i. Transactions are fully recorded in the records and accounts;
 - ii. Transactions are promptly and correctly settled; and
 - iii. Unauthorised dealing is promptly identified and reported to management.



- c. Controls to ensure that activities are monitored frequently against the licensee's foreign exchange risk, counterparty and other limits and that excesses are reported.

Moreover, each licensee needs to ensure that its foreign exchange traders are subject to a written code of conduct governing foreign exchange dealing. Such a code of conduct should include guidance on trading with affiliated entities, the personal foreign exchange trading activities of foreign exchange traders, and foreign exchange trading relationships with foreign exchange and money market brokers with whom the licensee deals. Each institution should ensure that these Guidelines are periodically reviewed with all foreign exchange traders.

To control risk, licensees may:

- a. In the context of framework of a clear hedging strategy, the implications of which are well understood by the licensee under varying market scenarios, use hedging techniques that are appropriate for the nature and extent of its foreign exchange activities, the skills and experience of trading staff and management, and the capacity of foreign exchange rate risk reporting and control systems.
- b. Use netting through legally binding netting arrangements that permit offset trades against each other so that only the net amount in each currency is paid or received by each institution.

To allow exposures to be measured on a net basis, the legal basis for netting arrangements should be sound. In particular, licensees should ensure that a netting arrangement is legally enforceable in all relevant jurisdictions. Licensees that use informal payment netting - i.e. where there is no formal netting contract between the counterparties - for instance, the back offices of each counterparty confer by telephone before settlement and agree to settle only the net amount of the trades falling due should ensure that they fully understand and appropriately manage the legal, credit, and liquidity risks since there may not be a sound legal basis underpinning such procedures. To take advantage of risk reducing opportunities, licensees should establish procedures for identifying netting opportunities.

4.3 Independent Reviews/Audits

Independent reviews/audits are a key element in managing and controlling the foreign exchange risk management programme. Each licensee should use them to ensure compliance with, and the integrity of, the foreign exchange policies and procedures. Independent reviews/audits should, at a minimum, and over a reasonable period of time, test the licensee's foreign exchange risk management activities in order to:

- a. Ensure adherence to foreign exchange management policies;
- b. Ensure effective management controls over foreign exchange positions, including effective segregation of duties;
- c. Ensure that operating procedures are adequate to minimise settlement risk;
- d. Ensure accurate and complete recording of transactions;
- e. Ensure the adequacy and accuracy of management information reports regarding the foreign exchange risk management activities;



- f. Ensure that foreign exchange hedging activities are consistent with the foreign exchange risk management policies, strategies and procedures; and
- g. Ensure that personnel involved in foreign exchange risk management are provided with accurate and complete information about the foreign exchange risk policies and risk limits and positions and have the expertise required to make effective decisions consistent with the foreign exchange risk management policies.

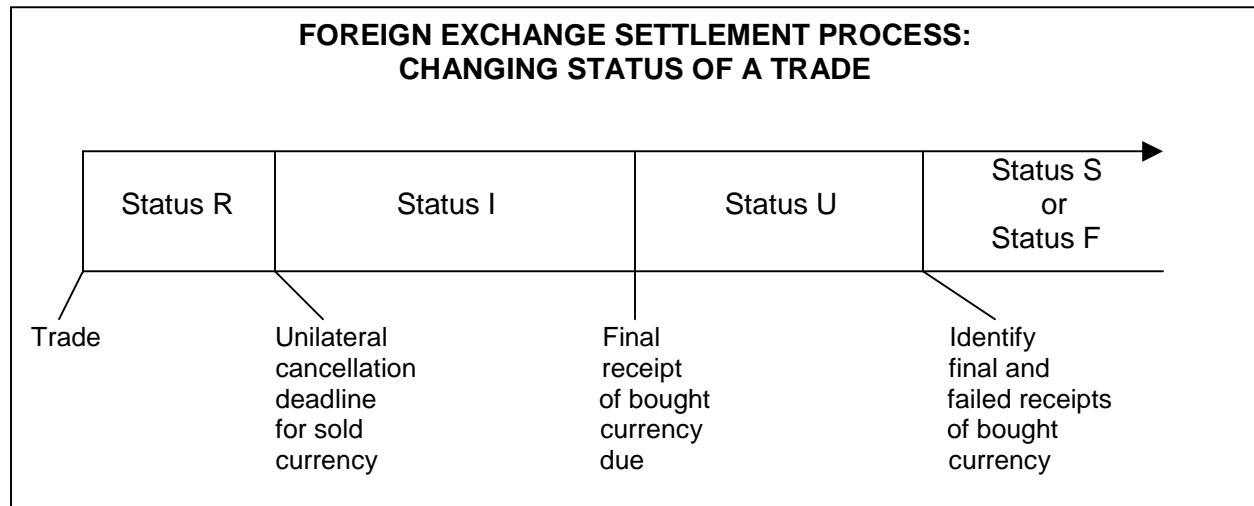
Assessments of the foreign exchange risk operations should be presented to the licensee's Board of Directors on a timely basis for review. Internal auditors should draw to management's attention promptly irregularities in trading patterns or trends, frequent excesses of limits or issues concerning controls in the trading area.



Appendix 1

Measuring Foreign Exchange Settlement Exposure

A licensee’s actual exposure i.e. the amount at risk when settling a foreign exchange trade equals the full amount of the currency purchased begins when a payment instruction for the currency sold can no longer be cancelled unilaterally and ends when the currency purchased is received with finality.



Although settling a trade involves numerous steps, from a settlement risk perspective, a trade’s status can be classified according to five broad stages.

Status Description

Revocable: The payment instruction for the sold currency either has not been issued or it may be unilaterally cancelled without the consent of the licensee’s counterparty or intermediary. A licensee faces no current settlement risk for this transaction.

Irrevocable: The licensee’s payment instruction for the sold currency can no longer be cancelled unilaterally either because:

- a. It has been finally processed by the relevant payments system; or
- b. Some other factor makes cancellation dependent upon the consent of the counterparty or another intermediary.

While the final receipt of the bought currency is not yet due, the bought amount is at risk.



- Uncertain:** The receipt of the bought currency is due, but the licensee does not know whether it has received these funds with finality. In normal circumstances, the licensee expects to have received the funds on time but it is possible that the bought currency was not received when due owing to an error or to a technical or financial failure of the counterparty or some other intermediary. The institution's payment instruction for the sold currency can no longer be cancelled unilaterally and the bought amount might, in fact, still be at risk.
- Fail:** The bank has established that it did not receive the bought currency from its counterparty. In this case the bought amount is overdue and remains at risk.
- Settled:** The bank knows that it has received the bought currency with finality. From a settlement risk perspective the trade is considered settled and the bought amount is no longer at risk.

Uncertain receipts in general are those receipts, where the receipt of the funds has not been positively confirmed by the institution. Positive confirmation means that a bank not only has received information from its correspondents about the payments credited to its nostro accounts but also has processed that information to determine which trades have successfully settled and which, if any, have failed. The actual exposure of the bank ends when the bought currency is received with finality.