

CORE RISK MANAGEMENT IN BANKING:

FOREIGN EXCHANGE RISK MANAGEMENT



Foreign Exchange Policy Department
BANGLADESH BANK

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Introduction

Globally, operations in the foreign exchange market started in a major way after the breakdown of the Bretton Woods system in 1971, which marked the beginning of floating exchange rate regimes in several countries. Over the years, the foreign exchange market has emerged as the largest market in the world. The decade of the 1990s witnessed a perceptible policy shift in many emerging markets towards reorientation of their financial markets in terms of new products and instruments, development of institutional and market infrastructure and realignment of regulatory structure consistent with the liberalized operational framework. The changing contours were mirrored in a rapid expansion of foreign exchange market in terms of participants, transaction volumes, decline in transaction costs and more efficient mechanisms of risk transfer.

The new millennium brought with it an increasingly complex and unpredictable global financial market. Events like housing bubble in the US ultimately resulted in the mortgage crisis, almost crippling their financial system and its peripheral entities. The Euro zone has been faring no better since 2009 due to heavy reliance on external debt of some of its member countries. Stock markets have reacted irritably through these changes and banking regulations have been tightened. Amid these global changes, Bangladesh has been insulated from any externality due to cautious regulatory stance regarding development of any complex financial instrument and reliance on external debt.

To forge ahead in the new global economy, the right balance between development of the financial markets and its inherent risks is necessary. We will also have to be extremely cautious against any situation, whereby our internal markets are totally exposed to wayward developments happening in the world economy.

From early nineties, Bangladesh embarked on a path of stepped-up reforms for financial sector development and broader openness to global trade and financial flows, towards spurring investment and output growth. In line with the openness, Bangladesh accepted IMF Article VIII obligation in the mid nineties concerning full convertibility of Taka for current external transactions. The exchange rate of Taka was floated with market based flexibility in early 2000s. A range of foreign exchange (FX) regulations enumerates residents' access to FX for current account transactions. FX transactions in deregulatory regime may entail a bank's financial strength to the potential risk of adverse movements in foreign exchange rates. Bangladesh Bank presently does not interfere in the day to day determination of exchange rates, but operates the monetary policy prudently for minimizing extreme swings in exchange rate to avoid adverse repercussion to the domestic economy. The exchange rate is determined in the market on the basis of market demand and supply forces of the respective currencies.

Risk is defined as an event that can cause financial, physical or reputational loss or can commit the bank/business to an uncertain future. While the types and degree of risks an organization may be exposed to depend upon a number of factors such as its size, complexity business activities, volume etc, it is believed that generally the risks banks face are Credit, Market, Liquidity, Operational, Compliance / Legal /Regulatory and Reputation risks.

As a part of their business functions, all financial institutions engage in numerous complex financial activities for which they require to pay proper attention to every details including the management of risk. Risk Management encompasses all the activities that affect its risk profile. It involves identification, measurement, monitoring and controlling risks to ensure that the

individuals who take or manage risks clearly understand it, organization's Risk exposures are within the limits established by the Board of Directors (BoDs) for the state owned & local private banks and appropriate independent market risk management departments (MRM) for the foreign banks, risk taking decisions are in line with the institutions' business strategy & objectives and risk taking decisions are explicit and clear.

It is acknowledged that specific foreign exchange risk practices may differ among banks depending upon factors such as bank's size, and the nature and complexity of its activities. However, a comprehensive foreign exchange risk program should deal with good management information systems, contingency planning and other managerial and analytical techniques. With this view in mind, this document sets out the guidance for managing risks with regard to foreign exchange which the banks follow in determining their risk acceptance criterion then for setting out various internal risk limits that should be subject to periodic reviews. The compliance of these guidelines are subject to periodic regulatory audit.

For updating the Foreign Exchange Risk Management Guidelines, a committee was formed as follows :

Sl.	Name	Designation	Department	Position in the Committee
01.	Mr. Md. Masud Biswas	General Manager	FEPD	Chairman
02.	Mr. Md. Saiful Islam Khan	Deputy General Manager	DFEI	Member
03.	Mr. Shamsul Arefeen	Joint Director	FEID	Member
04.	Mr. Muhommad Badiuzzaman Dider	Joint Director	FRTMD	Member
05.	Mr. Mohammad Anisur Rahman	Joint Director	FEOD	Member
06.	Mr. Bashar M Tareq	Head of Global Market	HSBC, Dhaka.	Member
07.	Mr. Md. Atower Hossain Prodhan	Joint Director	DBI-4	Member
08.	Mr. Md. Mazbah Uddin	Joint Director	FEPD	Member
09.	Mr. Md. Sarwar Hossain	Joint Director	FICSD	Member

The committee decided to request different banks for giving their opinion for the up gradation of Foreign Exchange Risk Management Guidelines. Several banks give their opinion. Then the committee analyzed Foreign Exchange Risk Management Guidelines of some neighbor country like India, Pakistan and Sri Lanka to implement the Guidelines. The committee has already done four meeting to updated the Foreign Exchange Risk Management Guidelines.

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1. Functions and Organizational set up

1.1 Functions:

The functions of today's treasury can be categorized as follows:

- Foreign exchange
- Money market
- Asset Liability Management
- Fixed Income Trading

Some of the typical products that would fall under treasury's functions are as follows. Certain products/ transactions require prior approval from Foreign Exchange Policy Department, Bangladesh Bank on a deal specific basis:

- Spot foreign exchange
- Forward foreign exchange
- Currency swap (*Plain Vanilla and Cross Currency Swap*)
- Interest rate swap (*Plain Vanilla, Collar, Cap, Cap Spread, etc.*)
- Forward rate agreement
- Non-deliverable forward exchange
- FX options (*Plain Vanilla, Seagull, Range forward, etc.*)
- Overnight deposits
- Term deposits
- Structured deposits
- Coupon securities
- Discounted securities
- Commodity trading and hedging (*Swap, Collar, Put, Cap, Cap Spread. Put Spread, etc.*)

At present the treasury functions are performed by three distinct office under separate supervision viz., front office, back office and mid-office. Functions of these offices are as follows:

1.1.1 Functions of Treasury Front Office:

- Statutory management
- Optimization of risk return through specialization and management
- Funding of the Balance Sheet at optimum prices
- Proposing interest rate matrix to the ALCO
- Proposing various investment options to the ALCO
- Analyze various economic trends and propose Balance Sheet Strategy to the ALCO
- Quotation of various foreign exchange and interest rates to customers
- Dealing in foreign exchange for position covering as well as for own account trading
- Various funding activities through various derivatives
- Provide structured treasury solutions to customer
- Remain vigilant for any arbitrage opportunities
- Marketing activities for future business growth
- Estimate daily P&L and work with reporting unit in resolving any difference

- Record/ maintain all foreign exchange and money market positions and check for differences with system generated/back-office reports
- Sending dealing information to Back Office through deal slip (if the deal is not done through automated system)
- Performing money market activities
- Security/fixed income trading (if it is a PD)

1.1.2 Functions of Treasury Mid Office:

- Limits monitoring and managing limit
- Adherence to various internal as well as regulatory policies
- Minimization of all risks
- Monitoring & management of various foreign exchange and money market positions
- Monitoring & management of various cash flows and cash positions
- Proposals/ renewals for various internal limits
- Monitor for trader's adherence to various internal and regulatory limits
- Monitor for trader's adherence to various counterparty limits
- Prepare, monitor and manage all balance sheet gaps
- Report any occurrence of crossing limit
- Various internal and regulatory reporting

1.1.3 Functions of Treasury Back Office:

- Input, verification and settlement of deals
- Receiving and sending of deal confirmation certificates
- Preparation of currency positions (of previous day-end) and report to traders prior to commencement of day's dealings
- Reconciliation of currency positions
- Rate appropriateness function for all deals done
- Revaluation of all foreign exchange positions at a pre-determined frequency
- Managing discrepancies and disputes
- Daily calculation for adherence to statutory maintenance
- Reconciliation of nostro accounts
- Reconciliation of vostro accounts
- Claim/ pay good value date effect of late settlements

1.2 Organization setup

In performing all the above listed functions in an appropriate manner and depending on the nature of business of the financial organization and its size, an organization would best determine the appropriate organization structure for its treasury and treasury back-office functions. However, irrespective of the size, nature of business, all treasury functions require to have clear demarcation between dealing and settlement/support functions i.e. the “treasury” that would be involved only in dealing activities and the “treasury support unit” (commonly known as the treasury back-office) that would be responsible for all related support functions including settlement of all transactions. This is required for control reasons i.e. different persons/departments should be responsible for the dealing and the settlement, measurement, reporting, etc.

In order to monitor and manage the organization's risks arising from treasury activities in a more detailed level, large financial institutions have the setup of an additional unit named as the "treasury mid-office". In smaller organizations where a separate treasury mid-office is not justified, the responsibility of the balance sheet risk measurement and reporting lies with the treasury back office. The Mid Office functions can also be performed by Finance in such smaller organizations.

1.3 – Centralized Foreign Exchange and Money Market Activities:

A financial organization's balance sheet is formed from its core activities. However, as perfection in the balance sheet is almost impossible, organizations require access to the wholesale market to plug gaps and mismatches (though wholesale activities are primarily for managing gaps and mismatches, this is also done for proprietary trading and arbitrage purposes). As the two types of wholesale activities i.e. foreign exchange and money market are heavily interdependent, these are required to be housed in the same area. This means that an organization's foreign exchange and money market activities are to be unified in the same department for efficiency.

The above discussion and the listing of functions of an ideal treasury (on the previous section) clarifies that an organization's foreign exchange and money market activities are needed to be centralized under a single treasury department reporting to the head of that business.

For example, when a foreign exchange trader is doing a USD/BDT deal, this would involve the local currency money market funding for which the trader would need to take/ give feedback from/ to the money market desk. When these two functions are centralized in the same treasury department, the foreign exchange trader, in completing the deal, can exchange the feedback with the money market trader with ease and in a timely manner. As we know that inter-bank dealing is highly time-critical, the money market trader can make an optimum decision in an efficient way when s/he receives the information at the earliest possible time. Similarly, the foreign exchange trader can immediately pass on the foreign currency funding information to the relevant money market trader who can immediately make an efficient decision of the foreign currency funding impacted by the USD/BDT deal.

1.4 - Separate Trading and Risk Management Units:

Where the traders are required to operate within the prescribed risk limit framework, a different group of people known as the market risk managers have the responsibilities of identifying the risk areas and the appropriate limits. The roles and responsibilities of these two departments in term of controlling and managing risk are:

1.4.1 Traders/Risk-Taking Units:

- Maintain compliance with the market risk limit policies and remain within their approved independent market risk limit framework at all times
- Ensure no limit breaches and arrange for pre-approval of any higher limit requirements
- Inform the market risk management unit of any shifts in strategy or product mix that may necessitate a change in the market risk limit framework
- Seek approval from the market risk management unit prior to engaging in trading in any new product

1.4.2 Market Risk Management:

- Review policy at least annually and update as required
- Independently identify all relevant market risk factors for each risk taking unit
- Develop proposals for the independent market risk limits/ triggers, in conjunction with the risk-taking units
- Ensure that limits/ triggers are appropriately established
- Independently monitor compliance with established market risk limits/ triggers
- Ensure ongoing applicability of the market risk limits/ triggers; formally review framework at least annually
- If applicable, review and approve limit frameworks, as well as limit change requirements
- Review and approve any temporary limit requirements
- Recommend corrective actions for any limit excesses
- Maintain documentation of limit breaches, including corrective action and resolution date

1.5 – Organization Chart:

Considering the above and in relation to the local market, an appropriate organization chart has been drawn. The proposed structure has been drawn bearing in mind all possible roles and functions that are currently applicable to market. In organizations where it does not justify employment of full time employees for each of the functions, a single employee or department can be used for more than one function. A sample organization chart has been provided on annexure IV for reference.

From the organization structures shown on annexure IV, it is evident that the reporting lines for the officers managing the treasury and the treasury back office are separated. This is an ideal structure that needs to be in place for control reasons. In our domestic market, organizations according to their existing structure/ policy, would best determine in which of their departments the treasury would report and in which the treasury back office would. For banks with Treasury Mid office, the reporting line for that unit would also be different.

1.6 - Job Descriptions:

Based on the organizational structure proposed on annexure IV, following is an overview of the various jobs depicting the key roles of each of these for an ideal treasury and a treasury back-office:

1.6.1 - TREASURY FRONT OFFICE:

1.6.1.1 - Head of Treasury:

- Overall responsibility of all treasury activities
- Responsible for the treasury financial plan
- Determine overall treasury business and risk strategy within internal and regulatory limits
- Set individual trader dealing limits from limits approved by management
- Monitor all traders' positions and ensure traders adhere to all internal, regulatory as well as trader specific limits
- Decide on particular positions during adverse situations
- Continuous development of systems, processes, business strategies, etc.
- Membership in the ALCO
- Propose overall balance sheet strategy to the ALCO

- Ensures a robust control environment for the treasury functions including dealers code of conduct, Chinese wall between the private and public side

1.6.1.2 - Cross Currency Trader:

- Forming Market Views
- Monitoring exchange positions
- Counterparty limits monitoring
- Collating all the cross currency exchange positions
- Remaining within all given internal and regulatory limits
- Remaining within all counterparty limits at all times
- Profitably trading/squaring the positions

1.6.1.3 - USD/BDT Trader:

- Trading spot and forward positions arising from import/export/remittances, etc.
- Collating the whole Bank's USD/BDT positions
- Remaining within all given internal and regulatory limits
- Remaining within all counterparty limits at all times
- Profitably trading/squaring the positions

1.6.1.4 - Securities and Statutory Management Trader:

- Maintenance of CRR and SLR
- Investment in securities Portfolio as appropriate
- Repo, Reverse-repo activities
- Propose to the ALCO (through the head of treasury) of statutory investments

1.6.1.5 - LCY & FCY Money Market Trader:

- Overnight/Call money activities
- Term market activities
- Repo, Reverse-repo activities
- Currency swaps
- FCY placements
- MM pricing of FCY
- Nostro fundings
- Spot any arbitrage opportunities and take advantage
- Remaining within all counterparty limits at all times
- Operating within all given balance sheet gap limits
- Profitably trading/ squaring the positions

1.6.1.6 - Balance Sheet Manager:

- Managing all balance sheet gaps
- Monitoring of market factors
- Interest rate and market forecasts
- Analysis of risk reports for presentation to ALCO
- Daily reports to senior management

1.6.1.7 – Corporate Dealer/Sales Manager

- Managing Client Relationships
- Checking Dealing Appropriateness
- Ensuring all appropriate documentation in place before dealing

- Preparing FX and IR Rate sheets
- Ensuring compliance with Credit/Risk Limits

1.6.1.8 – Fixed Income Trader

- Take positions in Securities
- Quote price to clients
- Manage the trading portfolio of securities
- Ensure compliance with Regulations
- Manage client purchase/sale, both local and foreign, in T-bonds/bills

1.6.2 - TREASURY BACK-OFFICE:

1.6.2.1 - Head of Treasury Back Office:

- Overall responsibility of all treasury back office activities
- Responsible for all relevant regulatory reporting
- Ensure compliance with Regulatory limits and escalate any excesses
- Escalate reconciliation related issues
- Discuss Treasury Risk issues with the Management
- Responsible for accuracy and timeliness of all Back office reports and MIS

1.6.2.2 - Manager – Local Currency Reconciliation:

- Reconcile all local currency accounts on a day to day basis
- Immediately advise money market trader and balance sheet manager of any discrepancy
- Track for reconciliation of any unmatched item
- Claim or arrange payment of good value date effects for any late settlements
- Send chasers for any unsettled items until it is settled

1.6.2.3 - Manager –Nostro Reconciliation:

- Reconcile all nostro accounts on a day to day basis
- Immediately advise USD/BDT or cross currency trader of any discrepancy
- Track for reconciliation of any unmatched item
- Claim or arrange payment of good value date effects for any late settlements
- Send chasers for any unsettled items until it is settled

1.6.2.4 - Manager – Vostro Reconciliation:

- Reconcile all vostro accounts on a day to day basis
- Immediately advise money market trader and balance sheet manager of any discrepancy
- Track for reconciliation of any unmatched item
- Claim or arrange payment of good value date effects for any late settlements
- Send chasers for any unsettled items until it is settled

1.6.2.5 - Manager – Foreign Currency Position Reconciliation:

- Receive copies of USD/BDT and cross currency traders' position blotters
- Reconcile all foreign currency positions between accounted for records and USD/BDT & cross currency traders blotters on a day to day basis
- Immediately advise USD/BDT or cross currency trader of any position discrepancy
- Investigate and match unreconciled amounts

- Advise USD/BDT and cross currency traders of correct currency positions prior to commencement of day's dealing activities

1.6.2.6 - Manager – Local Currency Position Reconciliation:

- Receive copies of position blotters from money market trader
- Reconcile all local currency positions between accounted for records and money market traders blotters on a day to day basis
- Immediately advise money market trader of any position discrepancy
- Investigate and match unmatched amounts
- Advise money market trader of correct positions prior to commencement of day's dealing activities

1.6.2.7 - Manager – Foreign Currency Settlements:

- Settle for all foreign currency deals done by USD/BDT, cross currency and the Fcy money market traders
- Send and receive confirmations of all deals done by USD/BDT, cross currency and Fcy money market traders
- Check nostro statements for settlements of major items
- Advise traders of any discrepancy in settlement for the prior dealing day
- All related accounting entries
- Generate various MIS

10.6.2.8 - Manager – Local Currency Settlements:

- Settle for all local currency deals done by Lcy money market traders
- Send and receive confirmations of all deals done by Lcy money market traders
- Check local currency statements for settlements of major items
- Advise traders of any discrepancy in settlement for the prior dealing day
- All related accounting entries
- Generate various MIS

10.6.2.9 - Manager – Vostro Settlements:

- Settle for all vostro transaction
- Check vostro statements for settlements of major items
- Advise dealers of any discrepancy in settlement for the prior dealing day
- All related accounting entries
- Generate various MIS

1.6.2.10 - Manager – Regulatory reporting:

- Send all required regulatory reports as per reporting schedule and as specifically required by the regulators
- Respond to various queries from regulators regarding reports
- Coordinate with other departments in receiving required information for reporting purpose
- Create awareness among various related departments of the importance of effective and accurate reporting

1.6.3 - TREASURY MID-OFFICE:

1.6.3.1 - Head of Treasury MID Office:

- Overall responsibility of all treasury Mid office activities

- Responsible for all relevant Risk reporting
- Measure for compliance with Regulatory/Internal limits and escalate any excesses
- Escalate regulatory and internal policy breaches by Front and back office
- Monitor Treasury Risk issues (both front and back office) with Management
- Responsible for accuracy and timeliness of all reports as well as MIS

1.6.3.2 - Manager - Risk Reporting:

- Monitor limit utilizations against all internal and regulatory risk limits
- Reporting of limit excesses, etc.
- Stop loss/ cumulative loss limits monitoring and reporting
- Monitoring of daily P&L
- Measuring the of balance sheet gaps
- Measuring the mark to market gain/loss
- Identify and escalate cancelled/amended deals
- Identify and escalate rate exceptions against off market rates
- Generate various MIS

1.6.3.3 - Manager - Risk Management:

- Monitor Key risk indicators of front and back office
- Identify future risk and design solutions as necessary
- Confirm risk management capabilities of the bank prior to introducing any new treasury product
- Ensure compliance with all action plans
- Prepare report detailing the risk management strategy for Treasury
- Responsible for accuracy and timeliness of all MIS

Banks may have the same individual looking after multiple functions of Treasury, and in some banks' treasury back office may perform treasury mid office functions too.

1.7 – Individual Trader Dealing Mandate:

Each dealer should have a dealing mandate approved by the management. The dealing mandate should describe the list of products the dealer is authorised to deal in, the individual limits authorised for each individual dealer, etc. The mandates should be reviewed and updated at least annually or more frequently if needed.

1.8 - Restrictions:

It is important to note that there are certain activities that are restricted by traders and back-office staff. These are listed below:

1.8.1 - TREASURY FRONT OFFICE STAFFS ARE RESTRICTED FROM:

- Deal processing
 - Accounting entries
 - Sending/ receiving deal confirmations
 - Issuing/ receiving any cheques
 - Sending settlement instructions
- Generating revaluation rates
- Running the revaluation process
- Regulatory reporting

- Involvement in raising rate appropriateness
- Setting up/approving counterparty credit limits
- Setting up/approving market risk limits

1.8.2 – TREASURY BACK-OFFICE STAFF ARE RESTRICTED FROM:

- Dealing activities
 - Decide on exchange rates/ quoting prices
 - Striking deals with counterparties
 - Raising deal slips
 - Altering deal details
- Updating position blotters
- Deciding on nostro funding
- Approving counterparty credit limits
- Approving market risk limits

1.8.3 – TREASURY MID-OFFICE STAFFS ARE RESTRICTED FROM:

- Dealing activities
 - Decide on exchange rates/ quoting prices
 - Striking deals with counterparties
 - Raising deal slips
 - Altering deal details
- Updating position blotters
- Deciding on nostro funding

In treasuries without a dedicated mid office, back office staff may look after mid office functions.

2. PROCESS

In a proper treasury setup, a trader strikes a deal in the market and maintains his/her own record for monitoring the exchange position. Within a reasonable time, s/he passes on the detailed information of the deal to the treasury back office. The back office arranges for the deal confirmation with the counterparty, arranges settlement, reconciles exchange positions and advises to treasury and runs the valuation on a periodic basis. A detailed flowchart of this function has been shown on annexure V.

The dealing function requires the traders to make very quick decisions either for taking advantages of any market movements or for unwinding an unfavorable position. Also, the treasury dealing is a wholesale function that involves large lot sizes. These together make the job of a trader requiring:

- Proper information sources e.g. Reuters Money Eikon, Bloomberg and other financial TV channels, etc.
- Adequate and dedicated communication tools e.g. a sophisticated Dealing System (optional), e-platform (optional), telephone, fax, internet facilities, etc.
- Specially designed dealing desks to appropriately accommodate the various information and communication tools
- Quick decision making authority (properly delegated authority by the management)
- Independent decision making authority
- Specific task allocations

In order to achieve the optimum level of efficiency, returns and most importantly controls, there are certain processes that the organization's management must put in place. The very basic ones of these which are related to our market are explained below:

2.1 - Dealing Room:

Since the traders have access to global live prices of various products through their various communication tools, their desks are required to be access restricted. As a result, traders are typically housed inside a covered room known as the "dealing room" where the access is generally restricted only to the traders and the related personnel. Access to this dealing room should be restricted through electronic access control system.

2.2 - Taped Conversations:

In many occasions, the traders conclude deals over the phone. This is particularly applicable where deals are done on the local market where traders are mostly known to each other and they feel comfortable dealing by talking to other traders over phone. Such deals over the phone do not have any hard evidence and in a fast dealing environment, there is risk of mistakes (of currency, purchase or sales, rates, amounts or value dates, etc.) As a result, all telephonic conversations taking place in the dealing room are required to be taped.

Taped conversations can assist in resolution of any disputes that may arise. As such, all telephone lines of the dealing rooms, may it be a direct line or a connection through the PABX, must be taped. This means that dealing over the mobile phones must be restricted. However, if the management feels that there is any specific need for dealing on mobile phone(s), this must be properly documented and recorded/taped where specific trader(s) may be allowed to engage in dealing on mobile phone(s) under specific circumstances. In some jurisdictions, it is required to advise all traders (of other organizations) beforehand that their conversation would be taped.

2.3 – Deal Recording:

The job nature of a trader is highly demanding and the environment of a dealing room is very fast moving. In such an environment when a trader continues to conclude deals, his/her focus remains on the market. As such there is a risk of a trader completely forgetting about a deal or part of a deal or making a mistake in recording that deal.

To eliminate this risk, a trader must record the deal immediately after it is concluded. The deal recording needs to be done in two ways:

Position Blotter: Immediately after a deal is done, the trader should record the deal on the position blotter and update his position. It is of utmost importance for a trader to remain aware of his/her position at all times. This is required to capture any immediate opportunity or to be in a position to immediately react to any adverse situation. A sample blotter has been shown on annexure VI. Banks with automated or integrated dealing systems (where deals are input directly and no deal slips are generated) have their blotter in electronic form and no paper deal slip is generated.

Deal Slip: A trader must, at the earliest possible time, record the details of the deal on a slip or memo which is known as the deal slip or deal ticket. For organizations that have implemented treasury automated systems, the deal slips are electronic and are through inputs into their

automated systems. A typical deal slip would contain details such as, payment instruction counter party, value date, currencies, amounts, rate, etc.

The deal slip should be passed on to the treasury back office at the earliest for their further processing of the deal. Ideally, all deal slips should be pre-numbered for control reasons and the treasury back-office must monitor for any breakage in sequence. Where pre-numbered deal slips are in place, any cancelled deal slips must also be forwarded to treasury back office for appropriate record keeping/filing. A format of a typical deal slip has been shown on annexure VII. For Banks using electronic deal capturing systems (where deals are entered directly into a software system) no paper deal slip is generated by the front office.

2.4 - Deal Delay:

Deals done by traders are processed by the treasury back office for which they need to be informed of the details of the deals within the fastest possible time.

The timeliness of raising deal slips/inputting into the automated system as well as passing them on to the back office is not only sound business practice but also critical for monitoring of credit risk, market risk and regulatory compliance. The following table provides a guide for standard time delays for deal captures:

Product	Deal slip raising/System input time	Deal slip to reach back office
Spot FX	Within 10 Minutes	Within 30 Minutes
Forward FX	Within 10 Minutes	Within 30 Minutes
FX Swaps	Within 10 Minutes	Within 30 Minutes
Call Money	Within 10 Minutes	Within 30 Minutes
Money Market Term	Within 10 Minutes	Within 30 Minutes
Foreign Currency Deposit	Within 10 Minutes	Within 30 Minutes
T-Bill/Bond Primary Auction Purchase/Corporate Security Underwriting	Within 10 Minutes	Within 30 Minutes
Repo	Within 10 Minutes	Within 25 Minutes
Reverse Repo	Within 10 Minutes	Within 25 Minutes
FX Option	Within 10 Minutes	Within 30 Minutes
T-Bill/T-Bond/Corporate security Secondary Trade	Within 10 Minutes	Within 25 Minutes

The above time delays are good practice standards and may not be required as mandatory. These may vary from bank to bank depending on the distance of the physical locations of the treasury and the treasury back office and degree of system automation within the treasury organization.

Banks with integrated systems where deals input by front office in an electronic platform automatically flows into the back office settlement systems and no manual deal ticket is generated, traders should ensure that deals are entered into system within their internally stipulated time delay if any. However, this should ideally not be in excess of 10 minutes

In case the deviation from the above mentioned times delays is in excess of 10 minutes, the concept of the deal delay process would be defeated. For monitoring of the proper functioning of this process, treasuries where manual deal slips are raised, should use time stamping on deal tickets. In environments where treasury automated systems are used, the time stamping may not be required since the systems are capable of take care of time logging automatically.

2.5 - Counterparty Limits:

The issue of counterparty limits arises from the risk that a customer with whom an organization had a reciprocal agreement defaults. Credit risk is the risk that the counterparty of the financial transaction, here a foreign exchange contract, may become unable to perform as per its obligation. The extent of risk depends on whether the other party's inability to pay is established before the value date or is on the same value date of the foreign exchange contract.

All bank must have prudent counterparty limit for foreign exchange exposure i.e. the maximum exposure the banks is willing to a particular counterparty should be determined.

2.6 - Triggers:

A trigger is a level of a position at which an organization decides that the management should be made aware of. This may be in terms of a market value of a position or an unusual trading volume, etc. This is a predetermined level given by the management. When a trigger is hit, the management needs to be informed of the same. Upon advised of a trigger, the management usually decides on closer monitoring of the particular situation. In cases of a loss trigger, the amount is generally set at a lower level than the stop loss limit (at which the position has to be covered).

2.7 – Stop Loss Orders:

It is an order placed with the dealing room to buy or sell once the currency price reaches a certain price. A stop-loss order is designed to limit the traders' loss on a fx position.

The high degree of volatility commonly found in the forex market can offer traders the potential to make big gains, but also to suffer large losses. For this reason, treasury should employ an effective trading strategy that includes stop loss orders to manage risks.

A stop loss order allows a dealer to set the minimum or maximum price at which s/he would have to buy or sell a currency.

A dealer with a long position has to set a limit order at a price below the current market price to attempt to cap the loss on the position. On the other hand a dealer with a short position will set a price above the current price as the initial target to manage risk. There are no hard and fast rules that regulate how treasury can use stop loss limit order to manage its risks. Deciding where to put these limits is its own decision because each treasury has a different risk tolerance. Some

treasuries may decide that they allow incurring 30 to 40-pips loss on a particular deal, while other treasury may limit themselves to only a 10-pips loss.

2.8 - Appropriateness of Dealing:

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

To address the appropriateness issue and in order to ensure that the client is fully aware of any risks associated with the associated transaction, it may be a good practice for the organization to get an appropriateness agreement signed with clients. This can also be addressed through obtaining the clients' board resolution that states the list of products and authorized persons for their transactions.

2.9 - Rate Appropriateness:

This exercise is carried out by the treasury back office to check if all deals have been dealt at market based rates. Any deals done at off market rates must be raised to the respective trader for a satisfactory explanation bringing this to the notice of the chief trader. In case of an unacceptable justification provided by the trader, the organization may decide to carry out further investigation. This monitoring process needs to be in place to guard against application of any inappropriate rates.

Treasury front office primarily uses Reuters for pricing of its products and treasury operations should also collect most of the data for their independent verification process from the same source. Following is a guide that can be used in the process of independent verification of prices for various products/instruments:

Instrument Source and Frequency of Update:

Instrument	Source	Frequency of Update	Note
Spot FX	Reuters/National Newspapers/BAFED A Reports/Bloomberg and other financial TV channels	Minimum once daily, as frequently needed Reuters Pages: AFX=, FXXZ, BD (F9), BKBG, etc.	
Forward FX/Swap	Reuters/Bloomberg/BAFEDA Report	Minimum once daily, as frequently needed Reuters Pages: AFX=, FXXZ, BD (F9), BGBD, BKBD, DIBR, LIBOR01, GBPF=, EURF=, JPYF= etc., USDIRS	In the absence of an active interbank USD/BDT forward market, banks may use spreadsheets to determine forward premium to use for verification of forward

			rates.
Cross Currency	Reuters/Bloomberg	Minimum once daily, as frequently needed Pages: AFX=, EFX=, FXXZ	
Foreign Currency Deposits	Reuters	At Booking Pages: DEPO, GBPF=, EURF= etc.	
Call Money	Reuters/National Newspapers	Minimum once daily, as frequently needed DIBR, BD(F9), Bangladesh Bank's mid day call money report etc.	
T-Bills/T-Bonds Primary Data	Reuters/Bangladesh Bank website/Bloomberg	Once daily Pages: BKBD	
Repo	Reuters/National Newspapers/Bangladesh Bank website	Page: BD (F9)	
Reverse Repo	Reuters/National Newspapers/Bangladesh Bank website	Page BD (F9)	
T-Bill/T-Bond (price)	Primary auction rate from BB website, Reuters/Bloomberg	Minimum once daily, as frequently needed	

In absence of an active interbank term money market and lack of publically available detailed information on T-bill/T-bond secondary trading, this cannot always be judged against any market information. However, for clarity, all term borrowings/placements should have sign-off from one level higher authority from the trader doing the transaction. This may also be covered under an appropriately delegated authority from the Head of Treasury and/or Chief Dealer as the case may be.

The rate band for each instrument needs to be fixed depending on the market liquidity and volatility for each. An indication of the rate bands that may be used by Treasury Operations for their independent price verification process is as below:

Instrument	Rate Band
Spot interbank FX	For currencies other than BDT, for contracts with USD on one side, a 1% on each side of the mid market rate can be taken as a guidance. For BDT it can be within 5 paisa on each side of the base rate.
Spot Customer FX	For spot Customer FX, the band can be 2% on either side.
Non BDT crosses	For CHF, EUR, GBP, JPY this can be 50 pips on either side.
Forward inter-bank swaps	25 pips on either side of the base swap rate for currencies against USD other than JPY. 25 bps on either side of the base swap rate for JPY.
FCY Borrowing/Lending	25 bps on both side of the base rate (quoted on Reuters for the particular tenor) for on and off-shore deals.
Call/Notice Money	1% on either side of mid rate of rage reported on Reuters BD page/newspaper.

The treasury departments of all banks publish a rate sheet for their daily FX transactions at the counter levels based on the market levels of USD/BDT as well as cross currencies available from Reuters. While these rates are mainly for retail transactions up to a certain threshold and for small transactions of corporate houses, they can be applied to all sorts of transactions at the discretion of the bank. However, both buy and sell transactions of large size and/or special nature and transactions under special circumstances may be dealt at rates outside these published rates which may be either over or under the published rates for that day by ensuring rate appropriateness.

It is noteworthy that all customer transactions are based on the principle of a positive spread. Any negative spread generating from a customer FX transaction must be highlighted as exceptions for explanations and approvals.

2.10 - Deals Outstanding Trigger:

It is a good practice to monitor the total deals outstanding of the treasury. This exercise requires to be carried out by the treasury back office to check against any unusual volumes of activity. Each treasury would have its own volume trend and the treasury back office should monitor whether all activities are being carried out within usual trend. The management may decide to set a trigger point for all outstanding FX contracts at any given point of time. If the trigger is exceeded, the treasury back office should escalate it to the attention of the head of treasury. This is an optional trigger that banks may consider if they wish to take a more conservative approach. Bank's with integrated systems (where the front office captures deals in a software platform and back office can monitor deal outstanding in real time) can readily identify changes in deal volume trend, so a trigger may not be required.

For example, in a fast dealing environment, a trader may make a mistake and execute a deal with an additional zero that would make the dealt amount much higher than intended. If a "deal outstanding" monitoring (by an independent unit) process is in place, this would be highlighted and brought to the attention of the senior management for any appropriate action. This mistake can also be readily identified if deal confirmations for all deal done are exchanged with counterparty back office on the same day. Back office would compare deals in system/deal tickets with counterparty confirmations and identify any discrepancies and escalate them.

2.11 - Daily Treasury Risk Report:

The treasury back-office/Bank Risk Unit is required to summarize all daily positions particularly the end-of-day positions on a report format for the information of the senior management. Such report should ideally contain information about outstanding open position against limit, different currency-wise outstanding exchange position (against limits if applicable), outstanding foreign exchange forward gaps in different tenors, tenor-wise MCO report, interest rate exposures of the balance sheet, counterparty credit limits usage, day's P&L against trigger & stop loss limit. A sample format of a daily treasury report for the senior management has been drawn.

2.12 – Conversation Language:

All dealing related conversations taking place in the treasury must be in an understandable and commonly spoken language for operational clarity. To elaborate, all conversations on the Dealing System must be in English and all conversions over telephone must be restricted to Bengali and/or English.

3.0 Dealing Environment

3.1 – Dealing Limits:

Management will assign the dealing room a set of specific limits. These may include:

- **Dealing Room FX Position Limit**
 - **Individual Trader Position Limit** – The total position a trader may take, in US\$ million. Individual trader position may be broken up by currency and Tenor if required.
 - **Individual Currency Position Limit:** Each trader can have individual currency wise limit assigned to their name for FCY/BDT or FCY/FCY positions. These limits can be further divided by tenor: i) Intraday Limit, the maximum position volume per currency an individual trader can take between Opening and closing each day, and ii) **Overnight limit** – The maximum position per currency an individual trader can carry into the next day.
 - By FX Product (Spot FX Trader, Forward FX Trader and FX Options Trader, etc.) individual limits.
 - By Tenor (Intraday, O/N and Forward limits)
 - Product List – Not all FX products may be traded by all banks or all traders. Dealing Mandates should reflect the FX Products that the dealing room or trading desk or an individual trader can deal in.

Banks taking a more conservative approach have the option to monitor the following limits:

- **FX Deal Limit:** Management can limit the individual FX deal size to a certain volume per day and per individual deal for individual traders and the dealing room.
- **Deal Outstanding limit:** Management can limit the monthly trade volume for each currency to a certain number. Another method may be to monitor the daily trade volume for each currency and report any unusual patterns. Bank with integrated systems and e-platform has instant access to trade flow volume data and can use this method easily.

3.2 - Mandatory Leave and Training:

The dealing functions are extremely sensitive and stressful involving wholesale and large amounts with exposures to adverse market movements. There is also risk of mistakes not being unearthed. As a result, for a particular trader's functions to be run by a different trader, all traders are required to be away from their desks for a certain period of time at one stretch during a year.

During this period, traders are expected not to contact with their colleagues in the treasury area and the bank should not to contact the trader for any reason. Typically, this period is defined as a continuous two weeks period. This should be monitored and reported to top management. Any

exceptions, including contacting a trader on block leave, should be done with prior approval of treasurer. Traders going on leave should ensure all relevant information is handed over to their backup.

Training (special ACI certification course/bourse course) should be organized for the treasury personnel. Only trained personnel should be engaged in treasury activities.

3.2.1 Treasury Bench Strength:

Traders are specialists in their jobs and each treasury should develop backup personnel for all job positions. This would ensure that a trader on mandatory leave need not be contacted as his/her backup can take care of duties.

3.3 - Stop Loss Limits:

Based on the comfort on each trader and/or the treasury as a whole, the management allocates dealing limits. However, there is always risk of adverse market movements and no organization is in a position to absorb/accept unlimited losses. This results in organizations putting in place “stop loss limits”. Stop loss limits can either be trader specific or only be specific to the treasury as a whole as specified by the management. They can be:

- For each Individual Deal
- For each Individual trader during each working day/ week/ month
- For each working day for any treasury unit as a whole
- Over a specific working period for any treasury desk (e.g. FX, ALM, Fixed Income, etc.).

A bank’s dealing room may additionally have specific Management Action Triggers (MAT) that are set at levels below the stop loss levels to highlight the loss situation to the attention of the management for their decisions/instructions if any.

3.4 Position Reconciliation:

All traders’ positions must be reconciled with the positions provided by the treasury back-office. This must be done daily prior to commencement of the day’s business and before closing the day’s business. Unreconciled positions may lead to real differences in actual positions exposing the organization to adverse market changes and real losses. Traders should reconcile their dealing recorded on daily blotter (electronic or otherwise) prior to close of business as a good practice. Trades done using e-platforms should be reconciled against communications from e-platform provider by back office.

3.5 - After-hours Dealing:

After-hours deals are ones that are initiated at a time that is after the normal business hour of the day. For specific business reasons, an organization may decide to allow its treasury to engage in after-hours dealing. In such cases the organization must have properly laid down procedures detailing the extent to which they want to take risk during after-hours and which traders to have dealing authority and upto what limits they can deal during after hours. A bank will define its normal business hour for this purpose and have laid down processes/ procedures in place for the accounting and processing of all after hour deals.

3.6 - Off-premises Dealing:

A dealing transaction done by a trader who is not physically located in the dealing premises (irrespective of the time of day) is defined as an off-premises deal. An organization must have detailed laid down procedures for the off-premises dealing describing how these deals would be accounted for with least possible delay. Typically, organizations would designate particular trader(s) with the authority for off-premises dealings in case they decide to carry out such activity for some specific business reason/justification. The number and breakdown of off premises deals may be separately reported to the treasurer on a periodic basis.

3.7 – Deal Cancel and Amend:

Deals input in the system may need to be amended due to various reasons, i.e. information error (price, volume currency, settlement date inaccuracy, etc.), client request, system error or any other reason. Banks should have a detailed policy regarding deal cancellation, and a monthly report should be compiled by Mid/Back Office capturing the reason for deal cancellation and amendment.

4. Code of Conduct

Due to the special nature of job that traders engage in, they are expected to act in a professional and ethical manner. The principles constituting the ethical conducts for traders are detailed in annexure IX.

Banks are required to have detailed Dealers Code of Conduct that will guide the professional behavior of Dealing Room Staff. This should include and is not restricted to: Business Ethics, Interaction with Market, Risk Management and exception escalation process. Any deviations from the code should be notified to management immediately.

5. Electronic System and Data Safeguards

Traders use various systems including spreadsheets for managing their day to day business. All such systems should ideally be password protected for the reason of data safety. To protect the data and maintain discipline, the following measures need to be ensured:

- The system access given to traders should be periodically reviewed by the Treasurer to see if their job descriptions and dealing mandate justify the system access. Redundant access rights should be removed.
- Dealers should not share individual passwords unless the system provider is unable to give individual password (Like Reuters).
- The Generic files used by Traders (example: Excel file to prepare Daily Rate sheet or to price forwards) should be password protected and be designed according to a standard format endorsed by the Treasurer. The IT department of the bank may assist in protecting the specific cells of the file that contain formulae. Any changes/updates to the files should be logged.
- An authorised list should be maintained for entities where e-mail communication is sent regularly using common e-communication platforms (Yahoo mail/hotmail/Gmail). This list should be regularly updated. However, this does not apply to communications to the Regulators/ BAFEDA.

- Confidential information should not be sent to third party over common e-mail without prior authorization.
- Dealing Rooms dealing in inside information (Private side bond issue, IPO, Capital Market issues, etc.) should set up process to prevent data leakage, both through physical and electronic means.

5.1 Dealing Room Access log

Dealing rooms are restricted areas where the access should be controlled for unauthorized persons. If possible, access doors with electronic swipe cards should be setup. Access rights should be periodically checked and updated as needed.

5.2 Risk Limit Management

The Risk unit of the Bank provides Risk Limits (VaR, EaR, PV01, etc.) according to Regulations, Internal Policy and Risk appetite for dealing room, which are approved by management. A detailed policy on compliance with all such limits and escalation procedure should be in place for the dealing room. The risk exposure should be calculated daily by Middle Office/Risk unit/Finance and communicated to Management. Risk Management limits may include and are not restricted to:

PV01 limit:

Price Value of a Basis Point - the p/l that results from 1 basis point movement in product price. The FX Forward Positions are evaluated using the PV01 limits. The Dealing room is assigned an overall PV01 limit and individual PV01 limits for each currency the dealing room is authorized to deal in FX Forward purchase and sale. Net open forward position of the unit has to be within the PV01 and the bank's NOP limit.

Value at Risk Limit:

Value at Risk, commonly referred to by its acronym VAR, is a statistical measure of the worst probable loss on a position or portfolio of positions that can be expected over a specified period of time to a given level of confidence.

Straddle Gap/MCO Limit:

Banks, based on their annual FX inflow/outflow and balance sheet strengths, may choose to limit FX forward exposure for certain tenors. For example, Management may authorize a next FX exposure of US\$ 30 million up to three months, but US\$ 20 million for 1 year.

Out of Market Rate (OMR) Tolerance limit:

Banks should have a tolerance limit set on daily deal rate deviations from market rate. For example, if a bank sets the OMR Tolerance Limit at 1% of the daily market range, any deal rate that crosses that limit should be reported to management and explanation should be obtained from dealing room.

6. ALM/CFT Risk Management in Foreign Exchange:

6.1 AML compliance during transactions: For complying AML/CFT risk in foreign exchange transactions, banks need to ensure that they will transact only those customers whose appropriate identity is established by conducting due diligence to the risk profile of the client. Parameters of risk perception must be clearly defined in terms of the nature of business activity, location of customer and his clients, mode of payments, volume of turnover, service offered, social and

financial status etc. to enable categorization of customers into different risk grade. No transaction is to be made in the name of any person or entity listed under United Nations Security Council Resolutions (UNSCRs) or their close alliance adopted under Chapter VII of the Charter of UN on suspicion of involvement in terrorist or terrorist financing activities and proscribed or enlisted by Bangladesh Government. 'Person or entities listed under various resolutions of United Nations Security Council' can be downloaded from http://www.un.org/sc/committees/list_comp.html and the list of Bangladesh Government can be found at the schedule of Anti-Terrorism Act, 2009. For effective implementation of TFS relating to TF & PF banks are required to have automated screening mechanism that could prohibit any listed individuals or entities to enter into the banking channel. The banks should operate in such system whether they could detect any listed individuals or entities prior to establish any relationship with them. In particular, banks need to emphasize on account opening and any kind of foreign exchange transaction through an automated screening mechanism so that any listed individuals or entities could not use the formal financial channel.

6.2 AML compliance during establishing and maintaining Nostro & Vostro Account: Banks should establish Cross Border Correspondent Banking relationship after being satisfied about the nature of the business of the correspondent or the respondent bank through collection of information as per BFIU circular-10 dated 28 December, 2014. The bank should also obtain approval from its senior management before establishing and continuing any correspondent relationship. The bank must be sure about the effective supervision of that foreign bank by the relevant regulatory authority. Bank should not establish or maintain any correspondent relationship with any shell bank and not to establish or maintain any relationship with those correspondent or respondent banks that establish correspondent banking relationship or maintain accounts with or provide services to a shell bank. Banks should pay particular attention or conduct Enhanced Due Diligence while establishing or maintaining a correspondent banking relationship with banks incorporated in a jurisdiction that do not meet or have significant deficiencies in complying international standards for the prevention of money laundering and terrorist financing (such as the countries and territories enlisted in High –Risk and Non-Cooperative Jurisdictions in the Financial Action Task Force’s Public Statement). Detailed information on the beneficial ownership of such banks and extensive information about their policies and procedures on preventing money laundering and terrorist financing shall have to be obtained. If any respondent bank allow direct transactions by their customers to transact business on their behalf (i.e. payable through account), the corresponding bank must be sure about the appropriate Customer Due Diligence (CDD) of the customer has done by the respondent bank. Moreover, it has to be ensured that collecting the information on CDD of the respective customer is possible by the respondent bank on request of the correspondent bank. Here, 'Payable through accounts' refers to "Corresponding accounts that are used directly by third parties to transact business on their behalf."

6.3 AML compliance during wire transfer: As per prevailing law and regulation, full and accurate information of the originator has to be collected, preserved and has to be sent to intermediary/beneficiary bank in case of threshold cross-border wire transfers. For providing money of cross-border wire transfers to beneficiary, full and meaningful beneficiary information has to be preserved. Where several individual cross-border wire transfers from a single originator are bundled in a batch file for transmission to beneficiaries, the batch file has to contain required and accurate originator information, and full beneficiary information.

7. Nostro Account Reconciliation:

7.1 – Nostro Account Reconciliation:

Banks maintain various nostro accounts in order to conduct operations in different currencies including BDT. The senior operations manager of the organizations set limits for handling nostro account transactions that include time limits for the settlements of transactions over the various nostro accounts and the time and amount limits for items that require immediate investigation after receipt of the account statements. In defining these limits, consideration must be given to the transit and processing times of the various types of transactions.

The time and amounts limits, if exceeded, require referral to the operations manager for appropriate action. Persons reconciling nostro accounts are to be independent of originating, responding to, authorizing or booking transactions and must not reconcile the same accounts for a continuous period of more than twelve months. However, after the lapse of at least the next monthly reconciliation process immediately following the twelve month period, these persons can be reassigned with the same duties.

The process of matching open items must be performed each time statements are received and must ensure a true match (e.g. dates, amounts and transaction identity). All matches must be cross-referenced between “our accounts” and the statement. Entries that make up a partial or incomplete match are to be suitably cross-recorded so that a clear audit trail is provided. The current “our account” records and statements are to be maintained under control and custody of persons in charge of reconcilements.

As frequently as deemed necessary but not less than once a month, a “reconciliation balancing report” must be prepared for each “our account” which must include the “our account” balance, the related statement balance and a listing of all open items (all differences and unprocessed items).

Tracers must be sent if the open item exceeds the established time or amount limits. The operations manager must review all reconciliation balancing reports to evaluate the status and progress of eliminating open items and to ensure that investigation and follow-up efforts are satisfactory and tracers are sent on a timely basis. The operations manager establishes limits for monthly accrual of interests on overdrafts in “our accounts” maintained with other branches and correspondents. Overdraft interest for “our accounts” must be calculated for each day the branch is in overdraft in accordance with its records.

At least quarterly, a comprehensive review of all “our accounts” must be made by an officer independent of transaction processing and authorization functions to ensure that each account continues to be operated with a valid business purpose and that reconciliations and other controls continue to be in place and are effective. The maximum time limit after which unmatched items must be referred to the operations manager is shown in Annexure X.

7.1.1 Operational Loss/Write Off/Late Receipt Charge/Liquidation

The operations manager sets the time and amount limits for liquidation of open items or differences found unreconcilable as authorized by management according to regulations and internal policies. These items must be investigated as far as is practicable and if they are found unreconcilable, the operations manager may authorize liquidation through appropriate entries as

established as per their accounting policies. However, the items in question must be amply identified and corrective steps taken to prevent recurring differences.

Due to operational issues (SWIFT system down, late receipt of funds etc.) the bank may suffer loss. These should be written off (when applicable) or realised from counterparty (when applicable) as soon as possible. All late receipt charges due to delayed payments should be adjusted within the year and not carried forward. Exceptions should be escalated with explanations as to why the charges had not been cleared annually. Banks should have a policy to monitor and settle such issues.

A detailed flowchart of the reconciliation process has been shown in Annexure III.

7.2 – Mark-to-Market:

This is a process through which the treasury back-office values all outstanding positions (Spot and Forward, on and off balance sheet as detailed by Risk management policy/regulations) at the current market rate to determine the current market value of these positions. This exercise also provides the profitability of the outstanding contracts. The treasury back office gathers the market rates from an independent source i.e. other than traders (Reuters/Bloomberg, BAFEDA, calling other bank back offices) of the same organization which is required to avoid any conflict of interest. Back office can also check with traders if needed. Revaluation should be done daily and the p/l impact adjusted accordingly.

Traders are required to have their own P&L estimate which must be tallied with the ones provided by the treasury back-office. Any unacceptable difference between these two must be reconciled to an acceptable level.

7.3 - Valuations:

The process of revaluing all positions at a pre-specified interval is known as valuation. Though this exercise, an organization determines that if they are to liquidate all the positions at a given time, at what profit or loss they would be able to do so.

This function is carried out by the treasury back-office by gathering revaluation rates. Ideally, the treasury back-office should gather such rates from sources other than from the traders of the same organization to avoid any conflict of interest.

7.4 – Model Control Policy:

Any banking organization and particularly the treasuries use models for the following reasons:

- To generate valuations used in the various financial statements
- To produce market risk measurements used by independent risk management to monitor risk exposures

All financial models that are used for updating the organization's independent risk monitoring, must be validated and periodically reviewed by qualified personnel independent of the area that creates 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 Control Policy or 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

risk associated with using a model that has flaws in the underlying assumptions, errors in its implementation and/or is used inappropriately.

Model Validation is generally performed only once on a model however, subsequent re-validations on previously validated models are required only if analytic changes are made to the model that affect valuation and/or risk measurement calculations. Model Assumption Reviews must be conducted at least annually, or more frequently as warranted by business and market conditions.

The originator of a model must ensure that it is documented, resides in a control environment and any change to an existing model is reported. The Treasuries using the financial models, in conjunction with their systems support group, are ultimately responsible for ensuring that all models reside in control environments. A model validation process is not applicable to financial models which only perform simple arithmetic operations. These may include, but are not limited to, value-at-close calculations, earnings-at-risk calculations, interest accrual calculations, and aggregation or consolidation of risk exposures to compare against risk limits.

7.5 – Internal Audit:

Considering the complexities of the foreign exchange business, a process for an internal audit has widely been accepted as a check point to review the adequacy of the key control issues. A review may be conducted at least twice annually. This function can include checking for adherence to various limits, compliance requirements, statutory management, etc.

In addition to regular audits at specified intervals, a concurrent audit process can be put in place to ensure the treasury's functioning in an appropriate manner on a day-to-day basis. The concurrent audit control is automatically put in place with the implementation of a properly functioning Mid Office.

8.0 POLICY

All financial activities involve a certain degree of risk and particularly, the financial institutions of the modern era are engaged in various complex financial activities requiring them to put proper attention to every detail. Risk is defined as an event that can cause financial, physical or reputational loss or can commit the bank to an uncertain future.

The success of the trading business depends on the ability to identify and manage effectively the various risks encountered in the trading environment, and the organization's policies and processes require development over time to ensure that this is done in a controlled way.

The key risk areas of a financial institution can be broadly categorized into:

- Market Risk
- Liquidity Risk
- Credit Risk
- Operational risk
- Legal, Regulatory and Compliance Risk
- Reputational Risk
- Strategic Risk

The bank is exposed to a number of different risks between FX trade execution and final settlement. The risks vary depending on the type of pre-settlement and settlement arrangements.

A bank needs to understand the risks associated with FX transactions in order to adequately manage them.

The risks relating to settlement risk are principal risk, replacement cost risk and liquidity risk. Besides there is a presence of operational and legal risks between trade execution and final settlement and also the various pre-settlement and settlement arrangements and their impact on risks.

For the purposes of exposition, the risks are described from the point of view of “a bank” and a failed FX “counterparty” of that bank. Here it is also described the risks relating to a single FX trade between a bank and its counterparty.

Although Risk is always present, it must be actively and prudently managed in order to reduce the adverse consequences as far as possible to capture profitable opportunities. Risk management involves the following steps:

- Risk identification
- Risk measurement
- Application of Risk management tools.
- Risk management

8.1 Market Risk

A bank’s board (independent risk management function in case of foreign banks) would determine an overall risk appetite and exposure limit in relation to its market risk strategy. Based on these tolerances the senior management should establish appropriate risk limits. Risk limits for business units, should be compatible with the institution’s strategies, risk management systems and risk tolerance. The limits should be approved and periodically reviewed by the BoDs and/or independent risk management function, with changes in market conditions or resources prompting a reassessment of limits.

Institutions need to ensure consistency between the different types of limits. Some commonly used market risk limits are:

- Gap or Maturity Limits: These limits are put in place to monitor and manage exposures arising from the differences in maturity dates or re-pricing dates of transactions. For example, there may be gap limits for each maturity band of 3 months, 8 months, 9 months, one year, etc. to avoid maturities concentrating in a particular maturity band. Such limits can be used to reduce the volatility by staggering the maturity and/or re-pricing and thereby smoothing the effect of changes in market factors affecting price. Maturity limits are required to monitor and manage the liquidity risks as well as re-pricing risks.
- Notional or volume trigger: A trigger that needs to be monitored based on the notional amount of the total outstanding FX contracts. This helps to guard against any unusual transaction pattern in the dealing room. This trigger does not capture any price risk or market volatility risks.
- Stop loss limits: These limits are established to avoid unrealized loss in a position from exceeding a specified level. When these limits are reached, the position must either be liquidated or hedged. Typical stop loss limits include those relating to accumulated unrealized losses for a day, a week or a month. This limit can be given to individual dealers or to a trading desk as a whole.
- Value at Risk limits (VAR): VAR is generally accepted and widely used tool for measuring market risk inherent in trading portfolios. It follows the concept that reasonable expectation of loss can be deduced by evaluating market rates, prices

observed volatility and correlation. VAR summarizes the predicted maximum loss (or worst loss) over a target horizon within a given confidence level.

Generally there are three ways of computing VAR

- Parametric method or Variance covariance approach
- Historical Simulation
- Monte Carlo method

Banks need to set limits, including operational limits, for the different trading desks and/or traders which may trade different products, instruments. Limits need to be clearly understood, and any changes clearly communicated to all relevant parties. Risk Taking Units must have procedures that monitor activity to ensure that they remain within approved limits at all times.

Limit breaches or exceptions should be made known to appropriate senior management without delay. There should be explicit policy as to how such breaches are to be reported to top management and the actions to be taken.

8.2 Liquidity Risk

Liquidity risk is considered a major risk for any financial institutions as well as banks. It is a risk of a financial institution not being able to meet its funding obligations (including in foreign exchange) when due either from own sources, wholesale market sources or from the sources of the lender of the last resort.

The condition of funding from the wholesale market depends upon the liquidity in the market. Accordingly an institution short of liquidity may have to undertake transaction at heavy cost resulting in a loss of earning or in worst case scenario the liquidity risk could result in bankruptcy of the institution if it is unable to undertake transaction even at current market prices. Given that, banks should put in place appropriate liquidity limits which the board or management or the independent risk management department considers as appropriate based on various market conditions and forecasts.

The prerequisites of an effective liquidity risk management include an informed board, capable management and staff having relevant expertise and efficient systems and procedures. It is primarily a duty of the BoD's to understand the liquidity risk profile of the bank and the tools used to manage liquidity risk. The board needs to ensure that the bank has necessary liquidity risk management framework and that the bank is capable of managing any uncertain liquidity scenarios. Generally, the board of a bank is responsible to:

- position the bank's strategic direction and tolerance level for liquidity risk.
- appoint senior managers with the ability to manage liquidity risks then delegate the required authorities to accomplish the job.
- continuously monitor the bank's performance and overall liquidity risk profile.
- ensure that the liquidity risks are identified, measured, monitored, and controlled.

At the basic level, banks may utilize flow measures to determine their future funding requirements including in foreign exchange. A cash flow projection estimates a bank's inflows and outflows and thus net deficit or surplus (GAP) over a time horizon. This will help banks to better position themselves even in crisis situations.

8.3 Compliance Risk

Compliance risk is the current and prospective risk to earnings or capital arising from violations of, or nonconformance with, laws, rules, regulations, prescribed practices, internal policies, and procedures, or ethical standards. Compliance risk also arises in situations where the laws or rules governing certain bank products or activities of the Bank’s clients may be ambiguous or untested. This risk exposes the institution to fines, payment of damages, the voiding of contracts, etc. Compliance risk can lead to diminished reputation, reduced franchise value, limited business opportunities, reduced expansion potential, and an inability to enforce contracts.

All Banks should be fully conversant with compliance regulations relevant to their foreign exchange business. All audit recommendations arising from internal and external audits or from regulators must be regularly reviewed by departmental executives to ensure that recommendations covering their area of operations have been implemented and maintained.

The following indicators should be used when assessing the quality of compliance risk management:

Strong	Management fully understands all aspects of compliance risk and exhibits a clear commitment to compliance. The commitment is communicated throughout the institution.
	Authority and accountability for compliance are clearly defined and enforced.
	Management anticipates and responds well to changes of a market, technological, or regulatory nature.
	Compliance considerations are incorporated into product and system development and modification processes, including changes made by outside service providers or vendors.
	When deficiencies are identified, Management promptly implements meaningful corrective action.
	Appropriate controls and systems are implemented to identify compliance problems and assess performance.
	Training programs are effective, and the necessary resources have been provided to ensure compliance.
	Compliance management process and information systems are sound, and the Bank has a strong control culture that has proven effective.
	The Bank privacy policies fully consider legal and litigation concerns.
Satisfactory	Management reasonably understands the key aspects of compliance risk. Its commitment to compliance is reasonable and satisfactorily communicated.
	Authority and accountability are defined, although some refinements may be needed.
	Management adequately responds to changes of a market, technological, or regulatory nature.
	While compliance may not be formally considered when developing products and systems, issue are typically addressed before they are fully implemented.
	Problems can be corrected in the normal course of business without a significant investment of money or management attention. Management

	is responsive when deficiencies are identified.
	No shortcomings of significance are evident in controls or systems. The probability of serious future violations or noncompliance is within acceptable tolerance.
	Management provides adequate resources and training given the complexity of products and operations.
	Compliance management process and information systems are adequate to avoid significant or frequent violations or noncompliance.
	Bank privacy policies adequately consider legal and litigation concerns.
Weak	Management does not understand, or has chosen to ignore, key aspects of compliance risk. The importance of compliance is not emphasized or communicated throughout the organization.
	Management has not established or enforced accountability for compliance performance.
	Management does not anticipate or take timely or appropriate actions in response to changes of a market, technological, or regulatory nature.
	Compliance considerations are not incorporated into product and system development.
	Errors are often not detected internally, corrective action is often ineffective, or Management is unresponsive.
	The likelihood of continued violations or noncompliance is high because a corrective action program does not exist, or extended time is needed to implement such a program.
	Management has not provided adequate resources or training.
	Compliance management processes and information systems are deficient.
	Bank privacy policies are nonexistent or do not consider legal and litigation concerns.

8.4 Reputational and Fraud Risk

Reputational risk should be regarded as a generic term embracing the risks, from any source, that can negatively impact reputation of the organization, and not as a category of risk in its own right. Regulatory noncompliance, loss of customer data, unethical employee behavior, or an unexpected profit warning can all damage the reputation and stakeholder confidence which may eventually result in a credit downgrade as well.

These risks should be managed as well.

8.5 Credit Risk - Arises from an obligor's failure to perform as agreed. An investor is at risk if a borrower defaults on a financial obligation. This can be divided into two categories. A bank should have a clear cut guidelines regarding selection of counterpart to minimize the credit risk. The bank can use the ratings of independent credit rating agencies or use their important financial ratios to judge the credit worthiness of counterparty to ensure safety of funds.

These risks should be managed as well divulge.

8.6 Operational Risk – Operational Risk is defined as the risk of losses resulting from inadequate or failed internal process, people and systems, or from external events. Operational Risk can arise from both internal and external factors, some of which are as below:

Internal

- Operational errors
- Non-compliance with banking regulations, legal requirements, etc.
- Non-compliance with internal guidelines
- Infrastructure failure, including technological ones
- Launching new products without adequate operational support
- Late or incorrect payments
- Staff fraud
- Inadequate or incorrect documentation, etc.

External

- Adverse legal judgements
- Deliberate external fraud attempts against the Bank
- Money laundering
- Outsourced activities
- Natural disaster, fire, theft, etc.

The bank should properly identify, assess, monitor and control its operational risks, should ensure that its systems support appropriate risk management controls, and have sufficient capacity, scalability and resiliency to handle FX volumes under normal and stressed conditions.

8.6.1 Key considerations

- a. The bank should ensure that its operational risks are appropriately represented in the bank's operational risk management framework and confirm trades in a timely manner, using electronic methods and standard settlement instructions, where practicable.
- b. A bank should have a robust capacity management plan to ensure that its systems have sufficient capacity and scalability to handle increasing and high-stress FX trading volumes. The plan should include the timely monitoring of trading volumes and capacity utilization of key systems to prevent it from approaching critical levels. The bank should also have robust business resiliency and continuity plans to manage its operational risks and complete its FX settlement obligations.

8.6.2 Operational risk management framework

- a. The bank should establish an operational risk management framework that identifies, assesses, monitors and controls a bank's operational risks. The framework should address the accuracy, capacity and resiliency of a bank's operational processes and systems for FX settlement. The bank should periodically reassess its operational risks, including risks that stem from changes in its FX portfolio (eg new products).
- b. The bank's operational risks can arise from deficiencies in information systems, internal processes, personnel or disruptions from external events. These risks can lead to inadequacies in the accuracy, capacity and resiliency of a bank's operations and cause delays or errors in trading data or confirmation of FX trades. Further, operational risks can lead to losses resulting from the bank's failure to meet obligations on time, and create or exacerbate other risks (eg, liquidity risk and reputational risk). The bank should have appropriate plan to minimize the above risks.
- c. The bank should maximise the use of **Straight-through processing (STP)** by employing systems that automatically feed transactions, adjustments and cancellations from trade execution systems to other internal systems, such as operations and credit-monitoring systems. STP helps to ensure that data is disseminated quickly, accurately and efficiently throughout the bank, and allows for effective monitoring and control of risks from trade execution to settlement. For example, STP can facilitate the timely confirmation of trades with counterparties and eliminate errors from manual processing. Maximising the

use of STP, however, does not fully eliminate operational risk. In addition, STP systems require monitoring and sufficient capacity and scalability. In the event that STP systems are disrupted, a bank should have contingency procedures to continue its operations.

d. The bank should establish processes and procedures that allow it to confirm or positively affirm FX trades as soon as practicable after execution to reduce the potential for losses from market risk or other sources. Where practicable, a bank should use electronic methods and standard settlement instructions to maximise the use of STP and allow for prompt confirmation and affirmation. Escalation procedures should be in place to resolve unconfirmed transactions. Trade confirmations and affirmations should be transmitted in a secure manner to mitigate the possibility of fraudulent correspondence.

8.6.3 Capacity

- a. The bank should have a robust capacity management plan for its FX systems, including trading, credit monitoring, operations, and settlement systems. When assessing capacity needs, a bank should consider the sufficiency of FX systems and operational personnel.
- b. The bank should ensure its FX systems have sufficient capacity and scalability to handle increasing and high-stress FX volumes. A bank's capacity plan should include forecasting of expected and high-stress capacity needs. The forecasts should consider the FX trading behaviour of the bank and its clients.
- c. The bank should ensure its FX systems are designed appropriately for the scale of its current and expected FX business activity. Further, a bank should design its FX systems to accommodate the potential for large trading spikes in stress situations, as appropriate. Finally, a bank's FX systems should be flexible enough to meet changing operational needs.
- d. The capacity plan should include timely monitoring of trading volumes and capacity utilisation of key systems. A bank should monitor trading volumes in a timely manner to prevent them from reaching a critical level and assess the potential for large FX trading spikes.

8.6.4 Contingency planning

The bank should develop and test its business resiliency and continuity plans to ensure continued operations following a disruption. A bank should identify and address various plausible events that could lead to disruptions in their FX-related operations and should have appropriate systems, backup procedures and staffing plans to mitigate such disruptions. Business continuity plans should be documented and periodically reviewed, updated and tested by proper authority.

8.7 Settlement risk:

Foreign exchange settlement risk arises when a bank in a foreign exchange transaction pays the currency it sold but does not receive the currency it bought. Due to counterparty default, operational problems, market liquidity constraints and other factors, foreign exchange settlement risk may take place in the foreign exchange market which involves both credit risk and liquidity risk. The risk may be greater if there is an adverse price fluctuation between the contract price and the market price. From the point of view of credit risk dimension if a bank cannot make the payment of the currency it sold conditional upon its final receipt of the currency it bought, it may face the possibility of losing the foremost value of the transaction. Usually the duration of settlement is an intraday phenomenon in some cases it may be even longer i.e. overnight/over weekend or can last for several days. The receiving bank may be in liquidity risk if unsettled funds are required to meet obligations to other parties and this may be severe if the unsettled amount is larger or the alternative source of fund may be lift up at short notice in the unreceptive market. An important dimension of foreign exchange settlement risk is the systematic risk aspect which relates with the size of the bank's foreign exchange exposures and their capital as a result of failure of one counterparty could lead to that banks insolvency.

A bank's procedures for managing its foreign exchange settlement risk should be according to the range and scope of its activities. FX settlement risk management should initiate from the

highest levels of the organization, with a policy on it from the bank's board of directors which should be an integral and consistent part of the bank's overall policy towards counterparty risk. It should be regularly reviewed and modified to take into account of new circumstances and changes in the scale and nature of the bank's FX operations or in the method of settlement used.

All banking organizations must have prudent counterparty limits for foreign exchange settlement exposures. An FX settlement limit should be established for each counterparty i.e. the maximum exposure the bank is willing to take with a particular counterparty should be determined. The limit structure will depend on each organization's credit risk policies as well as target market criteria. Limits set by the bank should strictly be followed in case of foreign exchange settlement risk exposures for each counterparty. In case of any planned excess of settlement limit occurring, prior approval from appropriate credit management personnel is required. Exposure measures should be updated promptly as new deals are struck or when exposures from existing trades last longer than expected. Banks should develop effective monitoring system which enables them to observe developments in real time in case of not to exceed the settlement limits with large exposures for the better management of foreign exchange settlement risks. Even a bank should put additional emphasis on those exposures which are large or with less credit-worthy counterparties or in case of a series of fails indicates an underlying credit-worthiness problem. In general a review by the credit management personnel should take place for necessary corrective actions if any unauthorized limit excess still occurs despite these precautions.

8.7.1 Operational and legal risk management relating to settlement: The bank may also face FX settlement-related risks caused by weaknesses in its own operations and weaknesses in the legal enforceability of contractual terms and the governing law applicable to its transactions. If a bank has inadequate operational capabilities or if there are weaknesses in the legal basis for the pre-settlement and settlement arrangements, it can face increased principal risk, replacement cost risk and liquidity risk relating to counterparty failure.

Inadequate skills and insufficient processing capacity may increase potential exposures. These weaknesses can cause operational delays, inaccurate confirmation and reconciliation, or an inability to quickly correct or cancel payment instructions. Legal risk occurs when a counterparty's contractual FX obligations are non-binding, unenforceable and subject to loss because (i) the underlying transaction documentation is inadequate; (ii) the counterparty lacks the requisite authority or is subject to legal transaction restrictions; (iii) the underlying transaction or contractual terms are impermissible and/or conflict with applicable law or regulatory policies; or (iv) applicable bankruptcy or insolvency laws limit or alter contractual remedies.

Legal problems may affect settlement of a foreign exchange transaction. Legal issues may compromise the legal robustness of netting, the enforceability of unilateral cancellation times or certainty about the finality of the receipt of currency.

Pre-settlement risk: The risk that a client defaults on its agreement with the organization before the settlement day. Whilst the organization has not paid away any funds, it still has to replace the contract at the current market rates, which might have moved against. In this case the organization 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.

To avoid settlement risk, fraud, etc. banks are advised to use authenticated electronic trading platform (such as SWIFT, Bloomberg, etc.) for settlement of foreign exchange related transactions (such as LC issuing, LC advising, LC amendment, LC confirmation, Reimburse Authority, Reimburse Amendment Authority, etc.)

All banking organizations must have appropriate counterparty limits in place for their treasuries. The limit structure will depend 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 independent of the treasury dealing function. Any excesses of pre-settlement risk limits must be escalated to management immediately. Traders should make special and/or interim limits request on a prior basis in cases of any foreseeable limit excesses and/or for needs to transact higher amounts for specific reasons.

Settlement Risk arises from UNSC sanction:

As a member of United Nations, Bangladesh is obliged to comply with the instructions of the resolutions adopted by the Security Council under Chapter-VII of UN Charter. The instructions contained in the United Nations Security Council Resolution 1288(1999) and its subsequent resolutions and other resolutions have to be complied and if any account/transaction operated in the name of the person(s) or institution(s) listed in those resolutions or in the name of institution(s) owned or controlled directly or indirectly by them; the account(s) have to be frozen without delay and the same have to be reported to Bangladesh Financial Intelligence Unit. Any transaction operated in the name of the person(s) or institution(s) listed in 'Resolutions relating to the prevention, suppression and disruption of proliferation of weapons of mass destruction and its financing', adopted by the Security Council under United Nations Charter-VII, or in the name of institution(s) owned or controlled directly or indirectly by them; the account(s) have to be frozen without delay. Necessary measures have to be taken by collecting the list prepared under those resolutions proactively from the UN website (<http://www.un.org/sc/committees/index.shtml>). In applicable case, the necessary transactions have to reported as CTR/STR to BFIU.

8.8 Strategic risk - Arises from adverse business decisions or improper implementation of them.

9.0 Derivatives Guideline

9.1 Introduction

Derivative means an instrument, to be settled at a future date, whose value is derived from change in interest rate, foreign exchange rate, credit rating or credit index, price of securities (also called "underlying"), or a combination of more than one of them. Participants of this market can broadly be classified into two functional categories, namely, market-makers and users.

Users can undertake derivative transactions to hedge - specifically reduce or extinguish an existing identified risk on an ongoing basis during the life of the derivative transaction - or for transformation of risk exposure. Users can also undertake hedging of a homogeneous group of assets & liabilities, provided the assets & liabilities are individually permitted to be hedged. Market-makers can undertake derivative transactions to act as counterparties in derivative

transactions with users and also amongst themselves with prior permission from Bangladesh Bank where necessary.

Market-makers are all AD Banks (and their overseas offices) and users are business entities with identified underlying risk exposure. Market-makers may undertake a transaction in any derivative structured product as long as it is permitted by Bangladesh Bank. Users can enter into derivatives transactions only to hedge underlying commercial exposure and not for speculative purposes. The management of derivatives activities should be an integral part of the overall risk management policy and mechanism. It is desirable that the board of directors and senior management with customer understand the risks inherent in the derivatives activities being undertaken. Market-makers should have a 'Suitability and Appropriateness Policy' vis-à-vis users in respect of the products offered, on the lines indicated in these guidelines.

Foreign Exchange Forward (Local and Foreign Currencies), Foreign Exchange Swaps (Local and Foreign Currencies) and Cross Currency Swaps are permitted subject to creation conditions specified Guidelines for Foreign Exchange Transactions, 2009 (Volume-1) Chapter-1 and subsequent circular issued thereafter. Other derivative contract (not specifically mentioned in any instruction) Foreign Exchange Options, Interest Rate Swaps, Interest Rate Cap and Interest Rate Collar, etc. may be exercised only with prior permission from Bangladesh Bank and subject to certain conditions detailed in the following sections:

- Foreign Exchange Forward: Local and Foreign Currencies
- Foreign Exchange Swaps: Local and Foreign Currencies
- Foreign Exchange Options: Local and Foreign Currencies
- Cross Currency Swaps: Local and Foreign Currencies
- Interest Rate Swaps: Foreign Currencies
- Interest Rate Cap and Collar: Foreign Currencies

9.2 Risk Management Aspects in Derivatives and new product transactions

Market Maker- AD Bank(s)

User: Exporter and Importer

This section sets out the basic principles of a prudent system to control the risks in derivatives and new product activities. These include:

- a) Appropriate oversight by the board of directors and senior management in case of launching new derivatives/products.
- b) Adequate risk management process that integrates prudent risk limits, sound measurement procedures and information systems, continuous risk monitoring and frequent management reporting; and
- c) Comprehensive internal controls and audit procedures.

9.2.1 Corporate Governance

- It is vital, while dealing with potentially complex new products, such as derivatives that the board/senior management should understand the nature of the business which the bank is undertaking.

- The board of directors and senior management also need to demonstrate through their actions that they have a strong commitment to an effective control environment throughout the organization.
- The board and senior management, in addition to advocating prudent risk management, should encourage more stable and durable return performance and discourage high, but volatile returns.
- The board of directors and senior management should ensure that the organization of the bank is conducive to managing risk. It is necessary to ensure that clear lines of responsibility and accountability are established for all business activities, including new derivative activities.
- The central risk control function at the head office should also ensure that there is sufficient awareness of the risks and the size of exposure of the trading activities in new derivatives & new product operations. The compliance risks in all new products and processes should be thoroughly analysed and appropriate risk mitigants by way of necessary checks and balances should be put in place before the launching of new products. The Chief Compliance Officer must be involved in the mechanism for approval of new products and all such products should be signed off by him. The Compliance Officer should also review and approve all the existing products in light of these guidelines.

9.2.2 Board and Senior Management oversight

The board should approve written policies which define the overall framework within which new derivatives activities or new product transactions should be conducted and the risks controlled. The policy framework for derivatives approved by the board may be general in nature. But the framework should cover the following aspects:

- To establish the institution's overall appetite for taking risk and ensure that it is consistent with its strategic objectives, capital strength and management capability to hedge or transfer risk effectively, efficiently and expeditiously.
- To define the approved derivatives products and their likes and the authorized derivatives & new product activities.
- To detail requirements for the evaluation and approval of new products or activities.
- To provide for sufficient staff resources and other resources to enable the approved derivatives and new products activities to be conducted in a prudent manner;
- To ensure appropriate structure and staffing for the key risk control functions, including internal audit;
- To establish management responsibilities;
- To identify the various types of risk faced by the bank and establish a clear and comprehensive set of limits to control these;

- To establish risk measurement methodologies which are consistent with the nature and scale of the derivatives and new product activities; and
- To detail the type and frequency of reports which are to be made to the board (or concerned committee(s) of the board). The type of reports to be received by the board should include those which indicate the levels of risk being undertaken by the institution, the degree of compliance with policies, procedures and limits, and the financial performance of the various derivatives and trading activities. Internal and external audit reports should be reviewed by a board-level audit committee and significant issues of concern should be drawn to the attention of the board.

9.2.3 Checklist for transacting derivatives

- **Suitability and Appropriateness Policy:** The rapid growth of the derivatives market, especially structured derivatives has increased the focus on ‘suitability’ and ‘appropriateness’ of derivative products being offered by market-makers to customers (users) as also customer appropriateness. Market-makers should undertake derivative transactions, particularly with users with a sense of responsibility and circumspection that would avoid, among other things, mis-selling. Inadequate understanding of the risks and future obligations under the contracts by the users, in the initial stage, may lead to potential disputes and thus cause damage to the reputation of market-makers.

The market-makers may also be exposed to credit risk if the counterparty fails to meet his financial obligations under the contract. The market-makers should carry out proper due diligence regarding ‘user appropriateness’ and ‘suitability’ of products before offering derivative products to users. Each market-maker should adopt a board-approved ‘Customer Appropriateness & Suitability Policy’ for derivatives business. The objective of the policy is prudential in nature: to protect the market-maker against the credit, reputation and litigation risks that may arise from a user’s inadequate understanding of the nature and risks of the derivatives transaction. *Appendix-9 exhibits a Sample Suitability checklist.*

- **Capability checking of the users:** In general, market-makers should not undertake derivative transactions with or sell structured products to users that do not have properly documented risk management policies that include, among other things, risk limits for various risk exposures. Furthermore, structured products should be sold only to those users which follow prudent accounting and disclosure norms and are capable of ascertaining the mark to market position of these products on an on-going basis.

- **Documented records:** While undertaking derivative transactions with or selling structured derivative products to a user, a market-maker should document how the pricing has been done and how periodic valuations will be done. In the case of structured products, this document should contain a dissection of the product into its generic components to demonstrate its permissibility, on the one hand, and to explain its price and periodic valuation principles, on the other. The following information may be shared with the user:

- a) Description of the transaction
- b) Building blocs of the transaction
- c) Rationale along with appropriate risk disclosures
- d) Sensitivity analysis identifying the various market parameters that affect the product.

- e) Scenario Analysis encompassing both the possible upside as well as the downsides and analyse the expected impact of the proposed derivatives transaction on the user;
- f) Inform the customer of its opinion, where the market-maker considers that a proposed derivatives transaction is inappropriate for a customer. If the customer nonetheless wishes to proceed, the market-maker should document its analysis and its discussions with the customer in its files to lessen the chances of litigation in case the transaction proves unprofitable to the customer. The approval for such transactions should be escalated to highest level of authority at the market-maker as also for the user,
- g) Ensure the terms of the contract are properly documented, disclosing the inherent risks in the proposed transaction to the customer in the form of a Risk Disclosure Statement which should include a detailed scenario analysis (both positive and negative) and payouts in quantitative terms under different combination of underlying market variables such as interest rates and currency rates, etc., assumptions made for the scenario analysis and obtaining a written acknowledgement from the counterparty for having read and understood the Risk Disclosure Statement.
- h) Guard against the possibility of misunderstandings all significant communications between the market-maker and user should be in writing or recorded in meeting notes.

- **Authority check:** Market maker will ascertain whether a user has the appropriate authority to enter into derivative transactions and whether there are any limitations on the use of specific types of derivatives in terms of the former's board memorandum/policy, level at which derivative transactions are approved, the involvement of senior management in decision-making and monitoring derivatives activity undertaken by it.

- **Exposure check:** Market maker will identify whether the proposed transaction is consistent with the user's policies and procedures with respect to derivatives transactions, as they are known to the market-maker.

- **Terms of the contract:** Market maker ensure that the terms of the contract are clear and assess whether the user is capable of understanding the terms of the contract and of fulfilling its obligations under the contract. A term sheet detailing all the information related to trade should be signed by the client before executing any trades. *** *Please refer to Appendix Nine for Sample Term Sheets*

- **Dispute handling:** Market maker should establish internal procedures for handling customer disputes and complaints. They should be investigated thoroughly and handled fairly and promptly. Senior management and the Compliance Department/Officer should be informed of all customer disputes and complaints at a regular interval. It may also be noted that the responsibility of 'Customer Appropriateness and Suitability' review is on the market-maker.

- **Documentation Requirement:** Market participants are advised to ensure that the documentation requirements in respect of derivative contracts are complete in all respects. For the sake of uniformity and standardization in respect of all derivative contracts, participants may use ISDA documentation, with suitable modifications for continuing ongoing relationships. Counterparties are free to modify the ISDA Master Agreement by inserting suitable clauses in the schedule to the ISDA Master Agreement to reflect the terms that the counterparties may

agree to, including the manner of settlement of transactions and choice of governing law of the Agreement.

• **The identification of risk:** Market-makers should identify the various types of risk to which they are exposed in their derivatives activities. The main types of risk are and discussed in earlier sections:

- credit risk
- market risk
- liquidity risk
- operational risk
- legal risk



9.3 Product Guidelines

9.3.1 Spot Foreign Exchange

A foreign exchange spot transaction, also known as FX spot, is an agreement between two parties to buy one currency against selling another currency at an agreed price for settlement on the spot date. The exchange rate at which the transaction is done is called the spot exchange rate.

9.3.2 Forward Foreign Exchange

A FX forward contract or is a non-standardized contract between two parties to buy or sell a currency against another at a specified future time at a price agreed upon today. The party agreeing to buy the underlying currency in the future assumes a long position, and the party agreeing to sell the currency in the future assumes a short position. The price agreed upon is called the forward rate, which is agreed at the time when the contract is entered into.

The forward price of such a contract is commonly contrasted with the spot price, which is the price at which the asset changes hands on the spot date. The difference between the spot and the forward price is the forward premium or forward discount.

Forwards, like other derivative securities, can be used to hedge risk (typically currency or exchange rate risk).

9.3.3 Forex Options

A foreign-exchange option (commonly shortened to just FX option or currency option) is a financial derivative instrument that gives the owner the right but not the obligation to exchange money denominated in one currency into another currency at a pre-agreed exchange rate on a specified date. To hedge bonafide transactions, banks can exercise foreign exchange option only with prior permission from Bangladesh Bank in case to case basis.

Relevant Guidelines

- Banks can only offer plain vanilla options and its simple variations only.
- These transactions may be freely booked and/ or cancelled subject to verification of the underlying.
- All guidelines applicable for FX forward contracts are applicable to cross currency option contracts also.
- Cross currency options should be written by banks on a fully covered back-to-back basis. The cover transaction may be undertaken with a bank outside or inside Bangladesh or an internationally recognized option exchange. Any banks desirous of writing options (i.e. not back to back), should obtain a one-time approval from Foreign Exchange Policy department of Bangladesh Bank before undertaking the business. They should clearly explain the booking, processing, risk mitigates (i.e. option greeks like Delta hedging strategy) covering the transactions and scenario analysis of profit/loss of customer in details while seeking the approval.
- Banks have to go through a robust suitability process before commencing any options related transactions with the clients.

- The term sheet for the derivative transactions should also necessarily and clearly mention the following: a) The purpose for the transaction detailing how the product and each of its components help the client in hedging; b) The spot rate prevailing at the time of executing the transaction; and quantified maximum loss/ worst downside in various scenarios.
- The pricing of all forex derivative products should be locally demonstrable at all times.

9.3.4 Forex Swaps

Clients having a foreign currency liability and undertaking a foreign currency vs BDT swap to move from a foreign currency liability to a BDT liability or vice versa is allowed given AD banks is able to examine the suitability and appropriateness of the swap and be satisfied about the financial soundness of the client.

Purpose of this is to hedge exchange rate and/or interest rate risk exposure for those having long or short term foreign currency borrowing or to transform long or short term BDT borrowing into foreign currency liability.

Guidelines

- The term “long-term exposure” means exposures with residual maturity of one year or more. “Short term exposure” meaning less than one year exposures.
- The swap transactions, once cancelled, shall not be rebooked or re-entered, by whichever mechanism or by whatever name called.
- AD banks should not offer any swap structures other than vanilla, i.e. leveraged swap.
- The notional principal amount of the swap should not exceed the outstanding amount of the underlying exposure.
- The maturity of the swap should not exceed the remaining maturity of the underlying exposure.
- Banks should carry out due diligence regarding “user appropriateness” and “suitability” of the swap transaction.
- The term sheet for the derivative transactions should also necessarily and clearly mention the following: a) The purpose for the transaction detailing how the product and each of its components help the client in hedging; b) The spot rate prevailing at the time of executing the transaction. C) Quantified maximum loss/ worst downside in various scenarios.
- The pricing of all forex derivative products should be locally demonstrable at all times.
- Buying/Selling/Swapping foreign currency against BDT or another foreign currency is allowed between resident interbank counterparties and Buying/Selling/Swapping foreign currency against another foreign currency to cover client transactions or for adjustment of own position is allowed with banks abroad if Guidelines on Managing Core Risks in

Banking' (as prescribed by Bangladesh Bank vide BRPD circular 19 dated 09/10/2003). It is also allowed for AD banks to initiate trading positions with the overseas markets banks.

9.3.5 Cross Currency Swaps

Cross Currency Swap (CCS) or Currency Swap is an agreement between two parties to exchange interest payments and principals denominated in two different currencies. Purpose is to hedge FCY borrowing or lending related interest rate and exchange rate exposure and unwinding from such hedges.

Guidelines

- The notional principal amount of the product should not exceed the outstanding amount of the foreign currency loan.
- The maturity of the product should not exceed the unexpired maturity of the underlying loan.
- The contracts may be cancelled and rebooked freely.
- Banks should carry out due diligence regarding “user appropriateness” and “suitability” of the swap transaction.
- The term sheet for the derivative transactions should also necessarily and clearly mention the following:
 1. The purpose for the transaction detailing how the product and each of its components help the client in hedging;
 2. The spot rate prevailing at the time of executing the transaction.
 3. Quantified maximum loss/worst downside in various scenarios.
- The pricing of all forex derivative products should be locally demonstrable at all times.

9.3.6 Interest Rate Swaps

An Interest Rate Swap is a financial contract between two parties exchanging or swapping a stream of interest payments for a 'notional principal' amount on multiple occasions during a specified period. Such contracts generally involve exchange of a 'fixed to floating' or 'floating to floating' rates of interest. Accordingly, on each payment date - that occurs during the swap period - cash payments based on fixed/ floating and floating rates, are made by the parties to one another. Purpose is to hedge FCY borrowing or lending related interest rates exposure and unwinding from such hedges.

Guidelines

- The notional principal amount of the product should not exceed the outstanding amount of the foreign currency loan.
- The maturity of the product should not exceed the unexpired maturity of the underlying loan.
- The contracts may be cancelled and rebooked freely as per specific predetermined policy guidelines.
- Banks should carry out due diligence regarding “user appropriateness” and “suitability” of the swap transaction.
- The pricing of all forex derivative products should be locally demonstrable at all times.

9.3.7 Interest Rate Cap and Collar

An interest rate cap is an interest rate option in which payments are made when the reference rate exceeds the strike rate. Analogously, an interest rate floor is an interest rate option in which payments are made when the reference rate falls below the strike rate. Purpose is to hedge FCY borrowing or lending related interest rate exposure and unwinding from such hedges.

Guidelines

- The notional principal amount of the product should not exceed the outstanding amount of the foreign currency loan.
- The maturity of the product should not exceed the unexpired maturity of the underlying loan.
- The contracts may be cancelled and rebooked freely.
- Banks should carry out due diligence regarding “user appropriateness” and “suitability” of the Cap and Collar.
- AD banks can offer only those products that they can price independently. This is also applicable to the products offered even on back to back basis. The pricing of all forex derivative products should be locally demonstrable at all times.

*** For any other products other than mentioned above will require Bangladesh Bank approval on a case by case basis before transacting. Please update the sample product approval format (*Please use appendix Nine for Product approval format*) and send it along with application letter to General Manager, Foreign Exchange Policy Department.

10. CONCLUSION

The descriptions on the above pages depict a trader's job as a highly demanding one requiring high degree of skills and specialization in their respective areas. Certain key positions in the treasury back-office also require high level of skills and expertise.

The traders of an organization are responsible for risk management of the organization's overall balance sheet as well as managing the capital which is a highly responsible function where the best possible decisions are expected to be made in split-second.

It is the senior management's responsibility to ensure appointment of the appropriate and deserving personnel as treasury and treasury-back office staff. They should also on a continuous basis, identify the traders training and development requirement and arrange for the same. The management should also put in place an overall trading policy for its treasury defining the scopes, policies, risk-limits as well as their control mechanisms as well as set up and review individual dealer mandates.

A trader's job is extremely stressful requiring them to devote high degree of continuous concentration and remain alert all the time. Also, due to the current global nature of a treasury's business, today's traders require working for extended as well as unsocial hours. Many of the banks operating in the local market keep their dealing rooms operative for business reasons on Fridays, which is the local weekly holiday. Bearing this in mind, most advanced dealing rooms pay a special dealing allowance to its traders.

The management must appreciate that the nature of a treasury environment is ever changing where new market dynamics, products and as a result, new risks are evolving on a continuous basis. An organization's internal policies and structures must be designed in such a manner that identification of new risk and control areas is possible at the earliest where control mechanisms can be implemented prior to taking up any significant risk.

Annexure – I

Definitions:

Following are definitions of some terminologies used for this document:

- a) **Counter-party:** The other entity/bank or party with whom a transaction is concluded.
- b) **Exchange Position:** Exchange position refers to the position of foreign currency (FCY) to be reported as per prescribed format of Bangladesh Bank which indicates the total FX assets and liabilities and differences thereof.
- c) **Inter-bank Transactions:** Inter-bank Transactions refer to transactions between counterparties (banks and/ or other financial institutions) which participate in the inter-bank market.
- d) **Limit and Sub-Limit:** Limit and Sub-Limit express the approved aggregate value for particular currency (currency limit) either booked as asset or as liability.
- e) **Merchant Transaction:** Merchant Transaction indicates those transactions which involves in-house customers e.g. exporter, importer and remitter of the Bank. These are often termed as flow transactions or internal flows.
- f) **Open Position Limit:** Open Position Limit indicates the limit approved by Bangladesh Bank for maximum long and short aggregate currency position in equivalent USD.
- h) **Position Taking:** Position Taking refers to the transactions for which dealers enter into buy/ sell transaction in a particular currency with a view to making profit.
- i) **Revaluation:** Through this process, the LCY equivalent of the FCY assets and liabilities of the balance sheet (book value) are valued at market price using the prevailing exchange rate and any difference is accounted for.
- j) **Ready/Cash Deals:** Deals where the Transaction date and the Settlement date is same.
- k) **Value TOM:** Deals where the Settlement date is one working day after the Transaction date i.e. the settlement of the transaction is T + 1 working day. The term “TOM” here is used in a short form for “tomorrow”.
- l) **Value Spot:** Deals where the Settlement date is two working days after the Transaction date i.e. the settlement of the transaction is T + 2 working days, except USD/CAD where spot is T+1
- m) **After Hour’s Dealings:** Deals concluded by the dealers at a time that is after the bank’s internally approved dealing hour.
- n) **Off Premises dealing:** Deals concluded by dealers from outside the dealing room i.e. when the dealer is not physically located inside the dealing room.

- o) **Stop loss limit:** A limit set by the independent market risk management department or risk management unit which a dealer must not exceed when managing and/or closing an adverse position or portfolio.
- p) **Mark to Market:** A process through which all outstanding FX positions and portfolios are valued at the current market rate to determine the current market value.
- q) **Deal Blotter:** A listing of all the Deals that are executed over a trading day.
- r) **Deal Slip:** The Primary document where a dealer records all the information related to an executed deal. Banks with automated front office systems writes and passes their deal slips electronically while banks without automated systems hand over a physical slip to their back office for further processing of the transaction.
- s) **Currency Pair:** The two currencies in a foreign exchange transaction.
- t) **Spread:** The difference between the buying and selling price for foreign currency.
- t) **Overbought/Long:** If the F.C(s) purchased/FX asset(s) is/are more than the F.C(s) sold/FX liability(s), the Bank is said to have Overbought/Long position.
- u) **Oversold/Short:** If the F.C(s) sold/FX liability(s) is/are more than the F.C(s) bought/FX asset(s), the Bank is said to have Oversold/short position.
- v) **Square:** If the F.C(s) Purchase/FX Asset(s) are equal to F.C(s) Sales/FX liability(s), then the position is square.
- w) **Net Open Position (NOP):** The Net Open Position (NOP) is the residual balance of total F.C assets minus liabilities/ aggregate F.C purchase minus aggregate F.C sales.
- x) **Daylight/Intraday Limit:** The Daylight/Intraday Limit is the maximum position allowed by the management that can be taken during the course of the trading session by the dealers in a particular trading day.
- y) **Money market:** The Money Market refers to the marketplace where short term resources with maturity of funds ranging from one day to one year are raised and/ or deployed.
- z) **Treasury Bills:** Treasury bills refer to short-term negotiable debt obligations issued by the government of Bangladesh and backed by its full faith and credit with a maturity of up to one year.
- aa) **Repo:** Repo or Repurchase Agreement refers to sale of securities with a commitment to repurchase the same securities at a pre-agreed date in the future. Presently only government securities are being dealt with under repo transactions.
- bb) **Reverse Repo:** Reverse Repo refers to purchase of securities with a commitment to sell the same securities at a pre-agreed date in the future.

- cc) **Call Money:** Call Money refers to borrowing/lending of funds which can be matured by a same day notice of either party at any given date starting from the next working day.
- dd) **Overnight Money:** Refers to funds placed/borrowed that automatically mature on the following working day.
- ee) **Notice Money:** Notice Money refers to placement of funds beyond overnight for periods not exceeding 14 days.
- ff) **Term Money:** Term Money refers to placement or borrowing of funds for periods over 14 days.
- gg) **Dealing system:** System used for conversation/dealing among the counterparts for foreign exchange dealing.
- hh) **Trading spikes:** The comparatively large upward or downward movement of a price or value level in a short period.

Annexure – II

EARNINGS AT RISK

For those portfolios that are subject to accrual accounting, the Earnings at Risk methodology should be used for measuring how much the earnings might be impacted by an adverse movement in interest rates. Interest rate risk occurs when assets and liabilities reprice at different times (gaps), when assets and liabilities are subject to administered rate pricing, or when assets and liabilities reprice on different yield curves.

Earnings at Risk measures the potential pre-tax earnings impact on the non-trading portfolios for a given time period of a specified parallel movement in interest rates. The specific rate movements are statistically derived. For a portfolio without options, the Earnings at Risk for each currency are calculated by multiplying the repricing gap by the specified rate movement.

Earnings at Risk calculations are generally done for the full life of the portfolio. By convention, since there may be assets and liabilities with indefinite maturities, the calculation of full life earnings at risk is normally truncated at 5 years. The first step in calculating earnings at risk for a balance sheet without options is to construct gap schedules based on asset and liability repricings for each month and each year. Some assets and liabilities do not have contractual repricing dates or maturities, e.g. demand deposit accounts and overdraft loans: in these cases, assumptions need to be made and approved by the market risk unit.

All profit and loss items which have interest rate sensitivity, i.e. those revenues or expenses which vary with interest rate changes, must be included in the Earnings at Risk calculations. To calculate possible impact of rate changes on such positions, it is necessary to estimate the time it would take to eliminate the risk and close the gap, the defeasance period. This will obviously depend on the nature of the assets and liabilities and the availability of suitable hedging facilities. The level of change in interest rates will be determined by the length of the defeasance period. The longer it takes to rebalance the positions the greater the possible movement in interest rates.

The impact of the specified parallel shift of the yield curve is calculated for each year. The results for each year of the full life calculation are then discounted using the appropriate swap rate and are added together to provide the total change in the earnings of the portfolio.

Earnings at risk limits are to be set for all accrual portfolios, for the full life of the portfolio. Generally, the aggregate earnings at risk is limited to a percentage of annual budgeted earnings. The utilization of the earnings at risk against the set limits should be measured at least weekly, but procedures must be in place to ensure that the limits are not exceeded on a daily basis.

Example of Earnings at Risk in a Commercial Lending Portfolio:

Customer A – deposits Tk. 100 million for 91 days, fixed rate at 5% per annum

Customer B – borrows Tk. 10 million for 15 days, fixed rate at 9% per annum

Customer C – borrows Tk. 90 million for 151 days, floating rate determined monthly, currently at 9% per annum

	Outstanding Volume	Month 1 Volume	Month 2 Volume	Month 3 Volume	Month 1 Volume	Total
Assets e.g Loans	Tk. 100 M	Tk. 100M	Tk. 20M	0	0	0
Liabilities e.g Deposits	Tk. 100 M	Tk. 100M	Tk. 100M	Tk. 100M	0	0
Cumulative interest sensitive gap (Liabilities minus assets)			Tk. 90M	Tk. 100M	0	0
Rate Change/Defeasance factor		55 bp	55 bp	55 bp		
Earnings at Risk			Tk. 39.9k	Tk 15.9k		Tk. 92.5k

Notes:

In month 2 the loan of 90 million is repriced, so is not included in outstanding volume. The average volume of the fixed rate loan is 20 million, i.e. 10 million x 15 days/30 days.

The defeasance period is considered to be 1 weeks, i.e. the time to come to a decision, find a suitable hedge to close the position, obtain approval and put the hedge into operation could be as long as 1 month. Over this period of time, the 2 standard deviation interest rate movement, for example, is derived historically to be 55 basis points. Earnings at Risk is calculated as Cumulative interest rate gap x Rate Change x Time. For example in the second month: 90 million x 55 bps x 30/390 days = Tk. 39.9 thousand.

Earnings at Risk calculations are rarely as straightforward as the above example. Some products do not have easily defined maturities so actuarial estimates need to be used instead. Portfolios may also contain embedded options, the effect of which have to be taken into consideration.

This is an example of positive gapping: the balance sheet has been positioned to take advantage of a rise in rates, by borrowing longer term and lending shorter term.

Annexure - III

VALUE AT RISK

Value at Risk, commonly referred to by its acronym VAR, is a statistical measure of the worst probable loss on a position or portfolio of positions that can be expected over a specified period of time to a given level of confidence. The calculation of VAR requires a number of inputs:

- Market value of the position
- Daily volatility of the currencies
- Holding period
- Level of confidence

Market Value of Position:

The market value of position, expressed in US Dollars, is the base point from which expected losses are calculated. In other words, adding or subtracting (depending on whether the position is long or short) the VAR on a position to the market value will give the worst probable market value of the position.

Daily Volatility:

Foreign Exchange volatility is calculated from the daily movements in the foreign exchange rate over a specified historic time period. A key assumption in the calculation of historic volatility is that recent events play a more significant role in determining likely rate movements in the future than events, say that took place a year ago. As a result, recent rate movements are usually given higher weightage in the calculation of volatility. An alternative method commonly used in the market is to limit the historic period used to calculate volatility, and not apply any weighting. A third method is to use implied volatility i.e. the actual volatility traded in the market.

Whatever method is used, the risk manager should be aware of the difference between implied and historic. If the difference is significant, might be necessary to tune the calculation of historic volatility to bring it in line with implied.

Historic volatility is calculated by simply taking the Standard Deviation of the daily changes in the rates for the historic time period selected. To compare historic to implied volatility, the daily volatility needs to be converted to an annualized basis. This is done by multiplying the daily volatility by the square root of the number of trading days in a year (say 290).

Holding Period:

The holding period for VAR refers to the liquidity of the position i.e. how long it will take to liquidate the position in terms of number of trading days. The majority of positions (regardless of size) in freely floating currencies should be able to be liquidated within a twenty-four hour period. For these currencies, the holding period will therefore be set to one day. However, positions in currency that is not liquid may take several days to unwind, which may depend on the size of the position or general market conditions. In these cases, the holding period should be extended appropriately.

Level of Confidence:

The level of confidence selected determines the probability and frequency that there will be a rate movement in excess of the predicted (i.e. VAR) amount.

Market volatility is quoted to one standard deviation, thereby inferring that once in every five trading days the calculated worst probable loss will be exceeded. At two standard deviations, this is raised to one in every forty trading days. At three standard deviations this is increased to once in every two hundred days.

Based on the normal distribution of rate changes, the percentage of the distribution, defined by the number of Standard Deviation (σ), Level of Confidence will define the probability of a rate movement occurring outside the worst probable rate. The approximate relationship between Confidence Level and Standard Deviation is as follows:

$1\sigma = 90\%$ Confidence Level

$2\sigma = 95\%$ Confidence Level

$3\sigma = 99\%$ Confidence Level

However, since the concern is only with the half of the distribution that may cause a loss on a position, the Confidence Levels are raised as follows:

$1\sigma = 90\%$ Confidence Level

$2\sigma = 99.5\%$ Confidence Level

$3\sigma = 99.5\%$ Confidence Level

These Confidence Levels in turn can be expressed as frequency of occurrence (how frequently our expectation of worst probable rate movement will be exceeded in terms of number of trading days).

90% Confidence Level = 1 in 5 days

99.5% Confidence Level = 1 in 10 days

99.5% Confidence Level = 1 in 200 days

Market volatility is quoted to one standard deviation, thereby inferring that once in every five trading days the calculated worst probable loss will be exceeded. At two standard deviations, this is raised to one in every forty trading days. At three standard deviations this is increased to once in every two hundred days.

CALCULATION FOREIGN EXCHANGE VAR:

Gross VAR:

Gross VAR is calculated as follows, using the inputs discussed above:

Gross VAR = Market value of the position X Daily Volatility X Level of confidence X $\sqrt{\text{Holding Period}}$

Net VAR:

Net VAR reduces the Gross VAR calculated on a portfolio of positions by taking into account the way foreign exchange rates move in relation to each other. As with volatility, this Portfolio Effect (using the Markowitz's Portfolio Theory) or Correlation is also calculated from the same historic period. Correlations range from +1 to -1. A +1 correlation indicates that two currencies

move identically to each other against the US dollar. A -1 correlation indicates that two currencies move in diametrically opposite directions to each other against the US dollar. A zero correlation means there is no relationship between the ways the currencies move.

For example, studies reveal that there is positive correlation between Euro and Swiss Franc, which indicates that a long Euro position is hedged by the short CHF position. The Gross VAR calculated on each position can therefore be reduced proportionately. Just as the loss is limited, so is the profit potential in EUR/CHF position is limited.

The following table shows how positive and negative correlations between currencies affect Net VAR calculation:

Position A (Any currency)	Position B (Any currency)	Correlation	Correlation term sign (Effect on Net Var)
Short (+)	Short (+)	Negative (-)	Negative (-)
Long (-)	Long (-)	Negative (-)	Negative (-)
Short (+)	Long (-)	Positive (+)	Negative (-)
Long (-)	Short (+)	Positive (+)	Negative (-)
Short (+)	Short (+)	Positive (+)	Positive (+)
Long (-)	Long (-)	Positive (+)	Positive (+)
Short (+)	Long (-)	Negative (-)	Positive (+)
Long (-)	Short (+)	Negative (-)	Positive (+)

The correlation term sign indicates whether the portfolio effect will be added or subtracted in the Net VAR calculation. It should be noted that the Net VAR calculation cannot increase the aggregate of the Gross VAR on each position, rather reduces it to the extent of the correlation.

It should also be noted that a zero correlation does not mean that Net VAR will equal aggregate Gross VAR. There will be a reduction in Gross VAR on the basis that even a random movement between currency rates may to some extent reduce risk.

Calculation of Net VAR for Two Currencies:

$$Net\ VaR = \sqrt{(VaR_{x,a}^2 + VaR_{x,b}^2 + VaR_{y,a}^2 + VaR_{y,b}^2) + 2r_{x,y} \left[\begin{array}{l} (VaR_{x,a} \times VaR_{y,a}) + (VaR_{x,a} \times VaR_{y,b}) + \\ (VaR_{x,b} \times VaR_{y,a}) + (VaR_{x,b} \times VaR_{y,b}) \end{array} \right]}$$

Where,

$VAR_{x,a}$ = Gross VAR of currency 'x' in case of short position

$VAR_{x,b}$ = Gross VAR of currency 'x' in case of long position

$VAR_{y,a}$ = Gross VAR of currency 'y' in case of short position

$VAR_{y,b}$ = Gross VAR of currency 'y' in case of long position

$r_{x,y}$ = Coefficient of Correlation between currencies 'x' and 'y'

Calculation of Net VAR for Four Currencies:

$$Net\ VaR_{w,x,y,z} = \sqrt{\begin{array}{l} (VaR_{w,a}^2 + VaR_{w,b}^2 + VaR_{x,a}^2 + VaR_{x,b}^2 + VaR_{y,a}^2 + VaR_{y,b}^2 + VaR_{z,a}^2 + VaR_{z,b}^2) + \\ 2r_{w,x}[(VaR_{w,a} \times VaR_{x,a}) + (VaR_{w,a} \times VaR_{x,b}) + (VaR_{w,b} \times VaR_{x,a}) + (VaR_{w,b} \times VaR_{x,b})] + \\ 2r_{w,y}[(VaR_{w,a} \times VaR_{y,a}) + (VaR_{w,a} \times VaR_{y,b}) + (VaR_{w,b} \times VaR_{y,a}) + (VaR_{w,b} \times VaR_{y,b})] + \\ 2r_{w,z}[(VaR_{w,a} \times VaR_{z,a}) + (VaR_{w,a} \times VaR_{z,b}) + (VaR_{w,b} \times VaR_{z,a}) + (VaR_{w,b} \times VaR_{z,b})] + \\ 2r_{x,y}[(VaR_{x,a} \times VaR_{y,a}) + (VaR_{x,a} \times VaR_{y,b}) + (VaR_{x,b} \times VaR_{y,a}) + (VaR_{x,b} \times VaR_{y,b})] + \\ 2r_{x,z}[(VaR_{x,a} \times VaR_{z,a}) + (VaR_{x,a} \times VaR_{z,b}) + (VaR_{x,b} \times VaR_{z,a}) + (VaR_{x,b} \times VaR_{z,b})] + \\ 2r_{y,z}[(VaR_{y,a} \times VaR_{z,a}) + (VaR_{y,a} \times VaR_{z,b}) + (VaR_{y,b} \times VaR_{z,a}) + (VaR_{y,b} \times VaR_{z,b})] \end{array}}$$

Where,

$VAR_{w,a}$ = Gross VAR of currency 'w' in case of short position

$VAR_{w,b}$ = Gross VAR of currency 'w' in case of long position

$VAR_{x,a}$ = Gross VAR of currency 'x' in case of short position

$VAR_{x,b}$ = Gross VAR of currency 'x' in case of long position

$VAR_{y,a}$ = Gross VAR of currency 'y' in case of short position

$VAR_{y,b}$ = Gross VAR of currency 'y' in case of long position

$VAR_{z,a}$ = Gross VAR of currency 'z' in case of short position

$VAR_{z,b}$ = Gross VAR of currency 'z' in case of long position

rw,x = Coefficient of Correlation between currencies 'w' and 'x'

rw,y = Coefficient of Correlation between currencies 'w' and 'y'

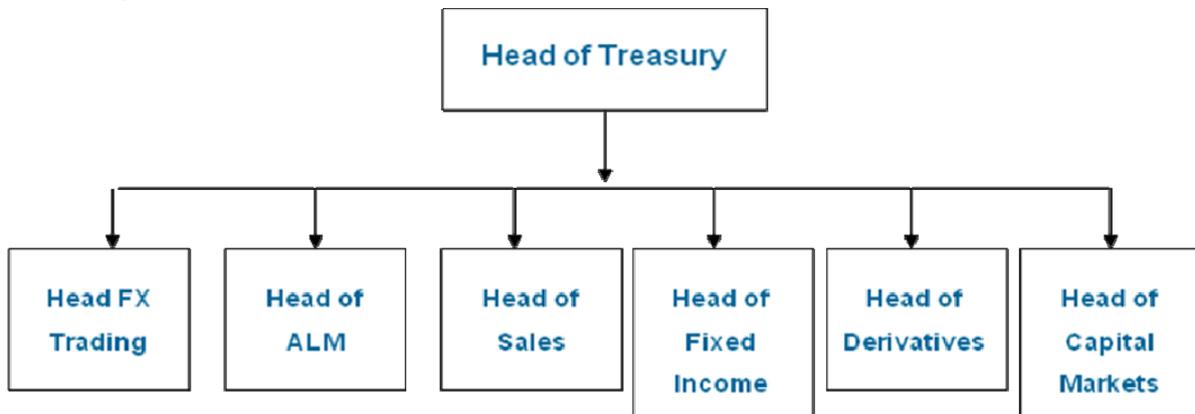
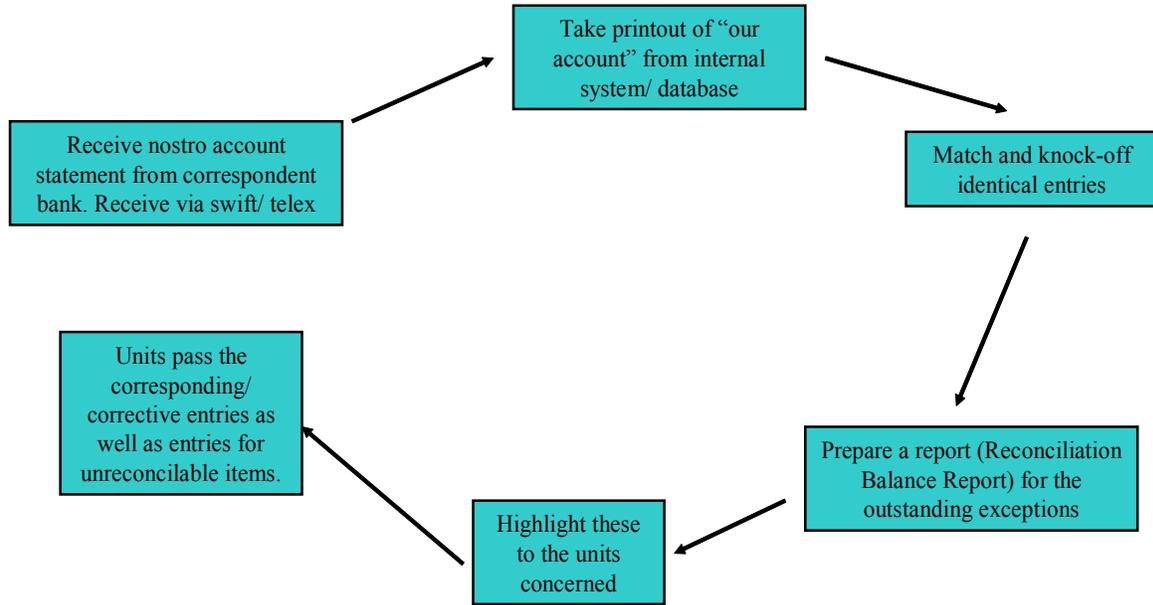
rw,z = Coefficient of Correlation between currencies 'w' and 'z'

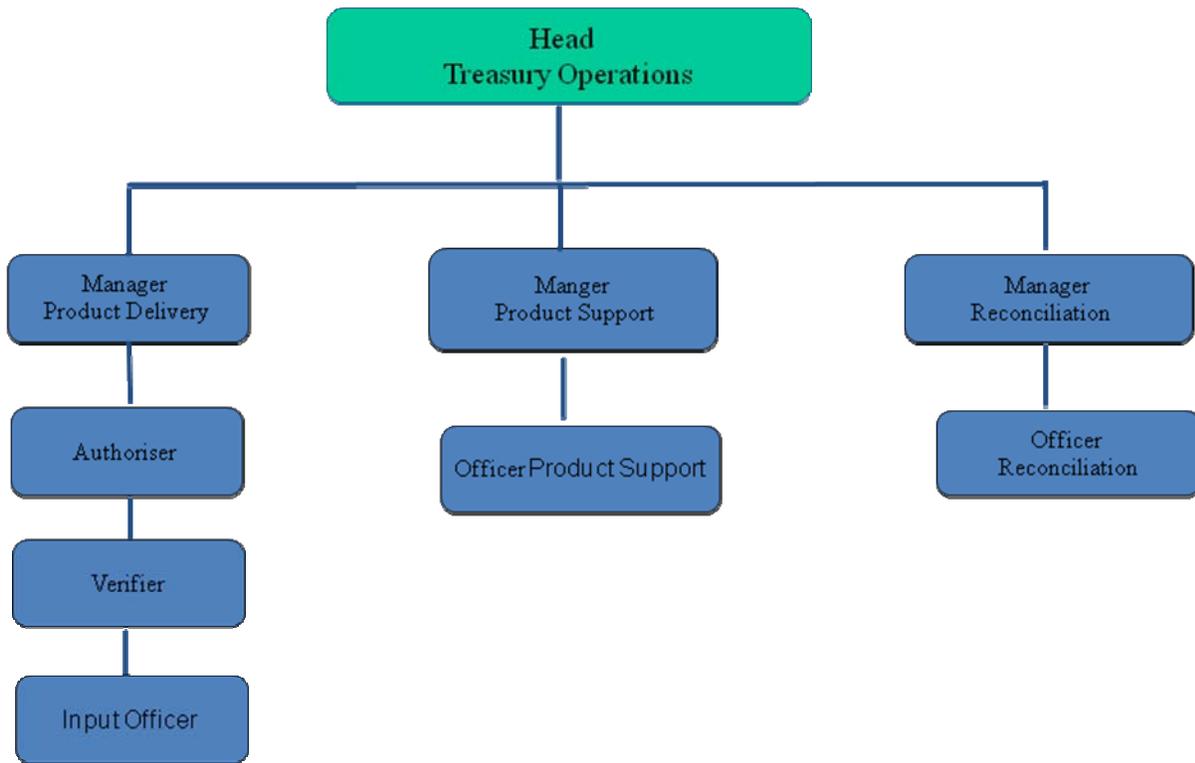
rx,y = Coefficient of Correlation between currencies 'x' and 'y'

rx,z = Coefficient of Correlation between currencies 'x' and 'z'

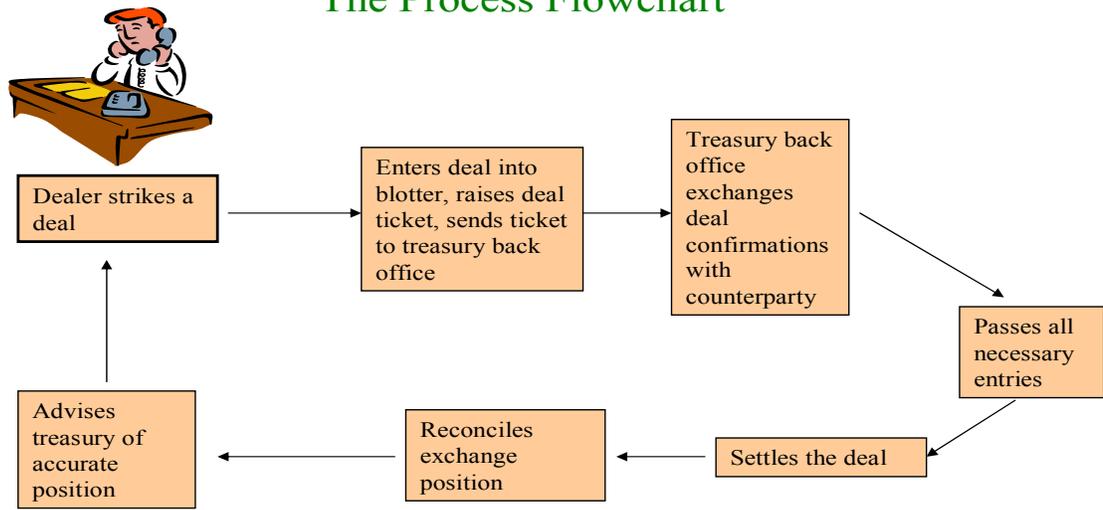
ry,z = Coefficient of Correlation between currencies 'y' and 'z'

Reconciliation Flowchart





The Process Flowchart



Note:

1. No manual deal ticket is raised when using e-platform/Reuters for dealing
2. For integrated system, no position reconciliation takes place between front and back office
3. As good practice, counterparty front office would reconcile deals done over phone
4. All daily deal confirmations should be sent to counterparty by end of business day
5. Back office should reconcile counterparty deal confirmation with deals to identify any discrepancies

Annexure - VII

XYZ Bank Limited
999, Motijheel C/A, Dhaka

FX POSITION BLOTTER

Date:

Currency: USD				
Counterparty	Purchase	Sale	Comments	Net Position

Currency: GBP				
Counterparty	Purchase	Sale	Comments	Net Position

Currency: EUR				
Counterparty	Purchase	Sale	Comments	Net Position

Currency: JPY				
Counterparty	Purchase	Sale	Comments	Net Position

NET OPEN POSITION:	
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Note: Organizations can add/ delete currencies according to their own requirement in the same format.

Annexure - VIII

XYZ Bank Limited
999, Motijheel C/A
Dhaka 9999

No. 0001

Foreign Exchange Deal Slip

Date:

Counterparty:

We Have Purchased/ Sold:

Currency:

Amount:

Against Sale/ Purchase of:

Currency:

Amount:

Deal Rate:

Value Date:

We Receive Payment at:

Their Payment at:

Special Instruction:

.....
Dealer's
Signature

Note:

There is no manual deal ticket raised where the front office and back office use integrated dealing and settlement systems.

Annexure-IX

Code of Conduct of the Foreign Exchange Dealers

General Code

1. Purpose

The aim of the code of conduct is to set out the manner and spirit in which business should be conducted, in order to ensure that the foreign exchange market and its participants enjoy a reputation for high standards of professionalism, integrity, and ethical conduct. This is addressed not only to dealers in foreign banks, but to the management of such institutions together with relevant operational support staff, and should be well understood by each of them.

2. Responsibility of management for dealing activities

Control of the activities of all personnel engaged in dealing (both dealers and the support staff) is the management's responsibility of such organizations. Management should therefore clearly set out, in writing, the authorities and responsibilities within which dealers and the support staff should operate. These might include:

- General dealing policy including reporting procedures;
- Persons authorized to deal;
- Instrument to deal in;
- Limits on open positions, mismatch positions, counterparts, stop-loss limits etc...
- Confirmation and settlement procedures;
- Relationships with other foreign exchange banks, brokers, and customers; and
- Other relevant guidance as considered appropriate.

3. Responsibility of staff for dealing activities

All personnel engaged in dealing activities (both dealers and support staff) must observe the following code as their fundamental behavior in the dealing activities:

- They must keep dealing activities within the responsibilities authorized by the management, and observe the instruction given by the management for supervisors in each dealing section (dealing room and back office) concerned.
- Troubles which arose during dealing activities, and other issues, which might cause serious troubles, must immediately be reported to the management or supervisors for their instructions.
- Full compliance with all regulations at all times.

4. Use market terminology and definitions

The management of banks should see if its staff use common expressions, and have knowledge of their generally accepted meanings in their dealing activities in order to avoid misunderstandings.

5. Dealing unit and back-office

The organizational framework in an institution should clearly separate the dealing unit from the back office where all the administrative work (payments, global position keeping) is done and from bookkeeping department which should, among others, be responsible for a timely and swift check of all incoming confirmations. A bank should not start foreign exchange trading with less than two trained and authorized people in its room designated for dealing.

6. Recording a deal

All the essential details of a deal must be written down in a dealing ticket which must be forwarding as soon as possible to the back-office for further processing. Alternatively, the information may be entered into the computer system.

7. Accounting

The back-office must work with the bank's accounting department to ensure that all transactions and violation changes are accounted for promptly. Because of two-day settlements, the value date accounting is inadequate for the monitoring of risk positions, and hence accounting must be established on a transactions basis.

Code Regarding Dealing Practices

1. Opening hours in the foreign exchange market :

Opening hour should be defined.

2. Confirming procedures

Dealers must confirm verbally or other authenticated electronic means.

After dealers' confirmation, it is the back-office's responsibility to carry out reconfirmation independently from those who initiated deals. Recommendation must be sent out as quickly as possible after a deal has been done, and should be addressed to the back-office of the counterparty bank.

All reconfirmations should include the following information as a minimum requirement:

- date of transaction;
- By which means effected (phone, telexed. ;
- Name and location of counterpart;
- Rate amount and currency;
- Type and side of deal (buying and selling)
- Value date, maturity date, and all other relevant dates;
- Standard terms/conditions applicable; and
- All other important and relevant information.

Upon receipt, all reconfirmation must immediately be thoroughly checked, and appropriate action be taken to rectify differences. If the counterpart's recommendation is considered incorrect, it must immediately be informed. A new reconfirmation (or written agreement to a correction) must be requested from, and provided by the bank whose original reconfirmation was incorrect.

3. Payment/settlement instruction

Payment/settlement instructions should be passed as quickly as possible to facilitate prompt settlement. The use of standardized payment instructions between counterparts who regularly deal with each other is recommended as their use can make a significant contribution to reducing both the incidence, and the size of differences arising from the mistaken settlement of funds.

4. Confidentiality

Confidentiality anonymity are essential to the operation of a professional foreign exchange market. Participants in the market—commercial clients as well as banks—can expect to have

their interest and to ensure that its employees can readily identify information that is confidential or situations where anonymity is essential, and instruct their employees to handle such information accordingly. Whenever confidentiality is broken, management has to see that the institutions are issued swiftly to correct the conditions that permitted such a situation to occur.

The use of confidential information by tenders for their personal benefit, or in a manner that compromises the institution in any way, should be strictly forbidden. Dealers operating in the market are responsible for maintaining confidentiality. Without disclosed or discuss any information relating to deals transacted, in the process of being arranged except to, or with the counterparts involved. A dealer should not be permitted to pass on information outside his institution, nor should he distribute information within his institution, except on explicit permission from the parties involved. Banks should have policies to ensure electronic and hard data are secure.

III. Ethical Rules

1. Trading for personal account

It is expected that any trader will give full attention to the employing institution's business activities, and not be distracted by his own financial affairs. Any bank dealer should not be allowed to deal for their own account in any instruments since it is expected that any dealer will fulfill his institutional responsibilities objectively, unbiased by his own financial position. Management has to be aware that, if traders are permitted to trade in instruments closely related to those they deal for the institution, a conflict of interest might arise that could be detrimental or embarrassing for the institution, the trader, or both. Therefore, it is the management's responsibility to develop a clear institutional policy on these matters.

2. Protection against Fraud

All staff should pay great vigilance to fraud attempted particularly in the following cases :

- Deals which do not include pre-agreed standard settlement institutions;
- Deals whose payment is made in favor of a third party;
- Inability to make reconfirmation after concluding the deal; and
- Other deals which have different standards than the pre-agreed.

3. Entertainment, gifts, and gambling : Neither management nor employees should offer inducements to conduct business, or solicit them from the personnel of other institutions. Where inducements are recognized in the normal course of the business, management should formulate policies in this area which include guidance on the provision and receipt of entertainment and gifts by staff. This should include what may or may not be offered or accepted, together with procedures for dealing with gifts judged to be excessive, but which cannot be declined without causing offenses. Similar guidelines should be established on gambling with other market participants.

IV Escalation Process:

Banks should have an escalation process to report exceptions/deviations from the code of conduct.

Annuxure - X

Nostro Account Reconciliation: The following table shows the maximum time limit after which unmatched items must be referred to the operations manager.

Type of Transaction	Transit Time
L/C payments	3 days, ACU - 9 days
Foreign exchange settlements	Nil. Immediately notify respective department if settlement does not occur on value date
TC Encashments	21 days
Outward remittances	3 days
Draft payments	30 days
ACU cover funds sent through Bangladesh Bank	9 days
Credits to our accounts with insufficient details	20 days
Correspondent bank charges recoverable from our customers or otherwise	30 days
Any other credits to our accounts, where we have not passed corresponding debit entry	9 days
Any other transactions where we have debited, but they do not credit	9 days
Any other transactions where they have debited, but we do not credit	9 days
Any other transactions where we have credited, but they do not debit	9 days

Annexure - XI

Appendix Nine: Derivatives Application to Central Bank Format

Applicant Bank's Name:	
Product Name:	
For which Client/s (Legal Name) :	
Level of client sophistication: Seniority of the client in the business, management awareness, level of product knowledge, understanding of pricing knowledge, used to do forward transactions and other hedging solutions.	
Back to Back with another market maker:	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes with which Bank?	

Target Transaction Date:	
Description of the product	
Deal flow chart (from start to end of the process)	
How many transactions required under this approval?	
Estimated volumes?	
Risk Assesment and mitigants: <ul style="list-style-type: none"> • System Booking capability • Tax and Legal checking • Credit Risk checking • Market Risk checking • Compliance check [any conflict with Bangladesh Bank rules and regulations] 	
Board and Senior Management awareness? (For first time transaction only)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Documentations: <ul style="list-style-type: none"> • ISDA required <input type="checkbox"/> Yes <input type="checkbox"/> No [If yes , attach sample ISDA vetted by lawyer] • Term Sheet required <input type="checkbox"/> Yes <input type="checkbox"/> No [If yes , attach sample TS vetted by lawyer] • Deal confirmation required <input type="checkbox"/> Yes <input type="checkbox"/> No [If yes , attach confirmation vetted by lawyer] • Client Suitability <input type="checkbox"/> Yes <input type="checkbox"/> No [If yes , attach the signed document] • Other documentations if any? <input type="checkbox"/> Yes <input type="checkbox"/> No [If yes , attach the document] 	
Followed FX Core Risk Guideline section on Derivatives?	<input type="checkbox"/> Yes <input type="checkbox"/> No