Foreign Exchange Transactions: Execution to Settlement Recommendations

for

Non-Dealer Participants

The Foreign Exchange Committee
Revised January 2016

Table of Contents

Introduction 2
The Foreign Exchange Market 2
The Changing Marketplace 2
What is the Foreign Exchange Committee and what are the Best Practices? 2
How to Use This Document 2

Pre-Trade Preparation and Documentation 2
Process Description 2
Recommendation No. 1: Determine FX Needs and Develop Appropriate Infrastructure 2
Recommendation No. 2: Ensure Segregation of Duties 3
Recommendation No. 3: Determine Appropriate Documentation 3
Recommendation No. 4: Communicate Necessary Information when Initiating or Expanding Trading Relationships 5

Trade Execution and Capture 6
Process Description 6
Recommendation No. 5: Establish Appropriate Trading Policies and Procedures 6
Recommendation No. 6: Clearly Identify Counterparties 6
Recommendation No. 7: Establish and Control System Access 8
Recommendation No. 8: Enter Trades Immediately 8

Confirmation 9
Process Description 9
Recommendation No. 9: Confirm Trades Immediately 9
Recommendation No. 10: Allocation of “Block” Transactions 10
Recommendation No. 11: Identify and Resolve Confirmation Discrepancies in a Timely Manner 11
Recommendation No. 12: Unique Features of Foreign Exchange Options 11

Netting and Settlement 12
Process Description 12
Recommendation No. 14: Mitigate Settlement Risk and Confirm Bilateral Amounts 14
Recommendation No. 15: Provide Settlement Instructions and Use Standing Settlement Instructions 14
Recommendation No. 16: Request Direct Payments 15

Account and Portfolio Reconciliation 16
Process Description 16
Recommendation No. 17: Perform Timely Account and Portfolio Reconciliation 16
Recommendation No. 18: Identify Nonreceipt of Payments and Submit Compensation Claims in a Timely Manner 17

Accounting and Control 17
Process Description 17
Recommendation No. 19: Conduct Daily General Ledger, Position, and P&L Reconciliation 18
Recommendation No. 20: Conduct Daily Position Valuation 18

Other 19
Recommendation No. 21: Develop and Test Contingency Plans 19
Recommendation No. 22: Ensure Service Outsourcing Conforms to Best Practices 20

Acknowledgments 21

Recommended Reading 22

Introduction

The Foreign Exchange Market

The foreign exchange (FX) market is the largest sector of the global financial system. According to the *2013 Triennial Survey* conducted by the Bank for International Settlements, FX turnover averages USD 5.3 trillion per day in the cash exchange market and an additional USD 2.3 trillion per day in the over-the-counter (OTC) FX and interest rate derivatives market.[1] The FX market serves as the primary mechanism for making payments across borders, transferring funds, and determining exchange rates between different national currencies.

The Changing Marketplace

Over the last decade, the FX market has grown in terms of volume and diversity of participants and products. Although commercial banks have historically dominated the market, today's participants also include investment banks, brokerage companies, multinational corporations, money managers, commodity trading advisors, insurance companies, governments, central banks, and pension and hedge funds. In addition, the size of the FX market has grown as the economy has continued to globalize. The value of transactions that are settled globally each day has risen exponentially—from USD 1 billion in 1974 to USD 5.3 trillion in 2013.

What is the Foreign Exchange Committee and what are the Best Practices?

The Foreign Exchange Committee (the Committee) is an industry group sponsored by the Federal Reserve Bank of New York that provides guidance and leadership to the global foreign exchange market through the development and implementation of best market practices and through enhancing the broader public's knowledge and understanding of the foreign exchange market via publications and other efforts. In all its work, the Committee seeks to improve the efficiencies of the foreign exchange market, encourage steps to reduce settlement risk, and support actions that facilitate greater contractual certainties for all parties active in foreign exchange.

In 1998, the Committee recognized the need for a checklist of best practices that could aid Non-Dealer Participants as they enter the foreign exchange market and develop internal guidelines and procedures to foster improvement in the quality of risk management. The original version of *Foreign Exchange Transaction Processing: Execution to Settlement, Recommendations for Non-Dealer Participants* was published in 1999 by the Committee's Operations Managers Working Group to serve as a resource for market participants as they periodically evaluate their policies and procedures regarding foreign exchange transactions. This 2015 update takes into account market practices that have evolved since the paper's original publication and supersedes previous recommendations by the Committee regarding Non-Dealer Participants.

The purpose of this paper is to share the experiences of financial institutions (those firms that are most active in the growing foreign exchange market) with Non-Dealer Participants (the businesses that may participate in the foreign exchange market on a more occasional basis). The twenty-two issues highlighted are meant to promote risk awareness for Non-Dealer

[1] Bank for International Settlements, *Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity 2013* (Basel: BIS, 2013).

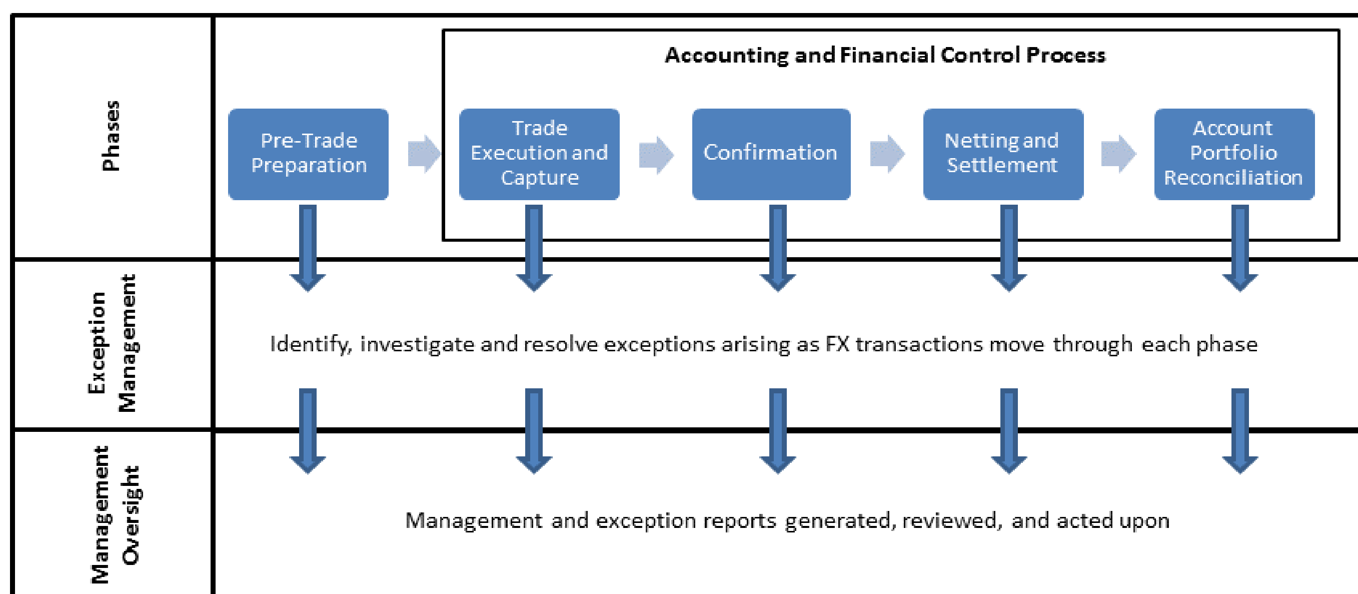
Participants and provide "best practice" recommendations. Participants in prime brokerage or similar arrangements should also be familiar with these Recommendations. This collection of best practices may mitigate some of the trading and operational risks that are specific to the FX industry. The implementation of these practices may also help limit potential financial losses and reduce operational costs.

This document is intended for use by Non-Dealer Participants. Those Non-Dealer Participants that are particularly active in the FX market are encouraged to also review the *Global Preamble: Codes of Market Practice and Shared Global Principles* as well as Committee's guidance to other market participants, specifically the *Guidelines for Trading Activities in Foreign Exchange* and the *Management of Operational Risk in Foreign Exchange*. These documents provide more detailed discussion of the business practices and operational guidelines appropriate to institutions with larger or more complex foreign exchange activities. Copies of these papers may be viewed online or downloaded from the Foreign Exchange Committee's web site at **www.newyorkfed.org/fxc**.

How to Use This Document

This document is divided into sections based on the six phases of the FX transaction process flow: 1) pre-trade preparation and documentation; 2) trade execution and capture; 3) confirmation; 4) netting and settlement; 5) account and portfolio reconciliation; and 6) accounting/financial control processes. How each of these individual phases integrates with the others in the FX process flow is outlined in Figure 1 below. Each section of this paper provides a process description of the steps involved in the trade phase discussed in that section, followed by a list of best practices specific to that phase. The paper concludes with general best practices that apply to overall risk management, including guidance for contingency planning and service outsourcing.

Figure 1 - The FX Process Flow



Pre-Trade Preparation and Documentation

Process Description

The pre-trade preparation and documentation process initiates the business relationship between two parties. During this process, both parties' needs and business practices should be established. An understanding of each counterparty's legal entity status, trading characteristics and level of technical sophistication should also develop. In summary, the pre-trade process allows both parties to mutually agree on procedures and practices for ensuring the safe and sound conduct of business.

Recommendation No. 1: Determine FX Needs and Develop Appropriate Infrastructure

It is critical for each Non-Dealer Participant to determine its underlying FX requirements and establish the appropriate infrastructure to support its activities.

Prior to initiating FX transactions (which for the purposes of this paper shall include FX spot, forwards, swaps, options and variations thereof, except where otherwise specified), a Non-Dealer Participant should perform a thorough assessment of its foreign currency activities within the context of its business and financial strategy. The risks associated with engaging in activities with respect to FX transactions – including market, liquidity, credit, legal, operational, regulatory and settlement risks – need to be identified, quantified and managed. Additionally, where applicable, a Non-Dealer Participant should also familiarize itself with the risks associated with trading in FX transactions involving restricted currencies, including, without limitation, the ability to divest local assets.

Clear policies and procedures governing all aspects of FX transactions trading and processing should be established, documented and maintained. As the nature of a Non-Dealer Participant's activities in the FX transaction market may continually change and evolve, policies and procedures should be periodically reviewed and updated.

All Non-Dealer Participants should ensure that they engage sufficient and experienced personnel to execute their FX transaction mandate. Each group or individual playing a role in the FX transaction process flow should have a complete understanding of how FX transactions are initiated, recorded, confirmed, settled, collateralized and accounted for. Insufficient knowledge of the overall FX transaction process, or any misunderstanding in respect of the role played by each individual or group, can lead to an improper segregation of duties, inadequate controls, and/or increased risk for the Non-Dealer Participant and its counterparties. In particular, a Non-Dealer Participant should understand whether a party is acting as principal or as agent, along with the implications of such role, as to the level of knowledge and experience that its representatives will need to perform their respective functions. All Non-Dealer Participants should provide ongoing employee education regarding business strategies, roles, responsibilities, and policies and procedures.

A clear ethics policy should be established, such as a code of conduct and/or external business conduct rules that conform to applicable laws, good convention and corporate policies[2]. Senior management

[2] See the Global Preamble: Codes of Best Market Practice and Shared Global Principles.

should ensure that such policies are well circulated, understood, and periodically reviewed by all personnel. The policies should be regularly updated to ensure they cover new business initiatives and market developments.

Recommendation No. 2: Ensure Segregation of Duties

Non-Dealer Participants should preclude individuals from having concurrent trading, confirmation, payment, and general ledger reconciliation responsibilities. Reporting lines for trading and operational personnel should be independent and individuals with supervisory responsibilities should ensure that appropriate segregation of duties exists between operations and other business lines and within operations.

Responsibility for trade execution, trade confirmation, payments, regulatory reporting, collateral management and general ledger reconciliation should be segregated as needed or to the greatest extent possible. At a minimum, responsibility for trade execution should be segregated from responsibility for subsequent processing steps. When such duties are not segregated, the potential for misconduct may increase. For example, an individual might be able to complete unauthorized trades and then hide any resultant losses.

Individuals responsible for confirmation, settlement, reconciliation, collateral management and regulatory reporting must be able to report any and all issues to individuals with supervisory responsibilities or other designated individuals independent of the trading function. To do so, operations staff must have a reporting line that is not directly subject to an organizational hierarchy that could lead to a conflict of interest or compromise of control. Non-Dealer Participants with a small number of treasury staff and an overlap in employee responsibilities should establish and document workflows and systems to prevent unauthorized activities. Such arrangements should be periodically verified by an independent audit conducted by either internal or external auditors, or both where appropriate.

Recommendation No. 3: Determine Appropriate Documentation

For OTC uncleared products, Non-Dealer Participants should determine their documentation requirements giving consideration to applicable laws or regulations and know whether those requirements have been met prior to trading in FX transactions.

A Non-Dealer Participant should begin trading FX transactions only if it has the proper documentation in place. The use of industry standard documents is strongly encouraged, to provide a sound mutual basis for conducting transactions in FX transactions. There are a variety of documents that ensure the smooth functioning of the markets for FX transactions and that protect market participants, including:

- *Authority documents*, which address both capacity (the right of a Non-Dealer Participant to enter into a transaction) and authority (permission for an individual to implement the capacity to act on the Non-Dealer Participant's behalf). If a Non-Dealer Participant has retained a third party to act on its behalf

http://www.newyorkfed.org/FXC/2015/Global%20Preamble%20March30.pdf

in executing transactions in FX transactions, that retention should be documented in an agreement and that agreement should be delivered by the Non-Dealer Participant to each of its Dealing Firms.

- *Master Agreements* contain terms that will apply to broad classes of transactions, including expressions of market practice and convention, and terms for netting, termination, collateral management and liquidation.[3]

- *Custodial Agreements* contain terms that outline an arrangement whereby an institution acting as a custodian holds assets or property, and performs other agreed-upon services, on behalf of the actual owner (the beneficial owner). Non-Dealer Participants should see that custodial arrangements are sufficiently robust to support FX transactions.

- *Confirmations* summarize the terms and conditions agreed by the parties to an FX transaction.

- *Standard Settlement Instructions* provide for the exchange of payment instructions in a standardized, secure and authenticated format.

- Any required documentation relating to third party settlement services to be engaged by the Non-Dealer Participant, for example documentation related to accessing financial market infrastructures that enable payment-versus-payment (PvP) settlement arrangements to mitigate principal risk, if it is anticipated that such third party services may be used in the settlement of transactions.

- Any engagement by a Non-Dealer Participant of an agent or advisor should be accomplished in a manner that is express and transparent.

Each Non-Dealer Participant is responsible for ensuring that it has the capacity to enter into an FX transaction, as well as for monitoring and enforcing compliance with its internal procedures regarding any limitations imposed on the trading authority of its employees or third parties acting on its behalf. As such, forwarding to Dealing Firms documentation that includes a number of investment limitations and restrictions affecting a Non-Dealer Participant's ability to trade and invest is not consistent with best market practice.[4]

A Non-Dealer Participant should also establish a policy on whether or not it will trade, and in what circumstances, prior to executing a master agreement with a counterparty. It should also be noted that electronic trading often requires additional or different documentation. Specifically, customer and user identification procedures, as well as security procedures, should be documented. Also, a Non-Dealer Participant should be aware that regulatory bodies have the authority to mandate that certain FX transactions be executed on regulated electronic platforms (*e.g.*, in the

[3] Applicable master agreements include, e.g.: (i) the International Swaps and Derivatives Association Master Agreement and Credit Support Annex; (ii) the International Foreign Exchange Master Agreement (IFEMA), the International Currency Options Market Master Agreement (ICOM), and the International Foreign Exchange and Options Master Agreement (FEOMA); and (iii) the International Foreign Exchange and Currency Options Master Agreement (IFXCO). Copies of IFEMA, ICOM, FEOMA and IFXCO are publicly available at: <www.newyorkfed.org/fmlg> and <www.newyorkfed.org/fxc>, respectively.

[4] For related guidance on this issue please see the letter to market participants on the FX Committee's website.

U.S., swap execution facilities [SEFs]) or cleared through central counterparties. Should those regulatory bodies exercise such authority, then the Non-Dealer Participant should be cognizant of its obligations (if any) pursuant to the rulebooks of applicable electronic platforms and/or central counterparties, as well as pursuant to any contractual agreement governing the Non-Dealer Participant's access to regulated execution and clearing.

In addition to settlement netting, master agreements may provide for "close-out" netting. Close-out netting clauses provide for: 1) appropriate events of default, including default upon insolvency or bankruptcy; 2) closeout of all covered transactions; and 3) the calculation of a single net obligation from unrealized gains and losses. Close-out netting provisions provide significant risk management benefits to both parties to a master agreement by providing for the netting of all outstanding transactions under an agreement. Master agreements with legally enforceable close-out netting provisions receive bankruptcy and insolvency law protection to ensure that the defaulting counterparty remains responsible for all existing contracts and transactions under the agreement and not just those it chooses. Thus, close-out netting provisions provide the legal basis for parties to measure counterparty exposure on a net rather than a gross basis.

A Non-Dealer Participant should be aware that Dealing Firms are likely subject to statutory, regulatory and supervisory requirements for "knowing" their customers. Dealing Firms need to know the identity of their counterparties, the activities they intend to undertake with the Dealing Firm, and why they are undertaking those activities. While each Dealing Firm may have different procedures for implementing these requirements, Non-Dealer Participants should cooperate in providing the information that allows Dealing Firms to fulfill these obligations. Additionally, certain regulations require very specific information to be provided to a Dealing Firm by a Non-Dealer Participant wanting to trade certain FX transactions, including a Legal Entity Identifier (i.e., a unique ID associated with a single corporate or other type of legal entity) ("LEI").

Recommendation No. 4: Communicate Necessary Information when Initiating or Expanding Trading Relationships

When initiating or expanding trading relationships to cover FX transactions, Non-Dealer Participants should take steps to communicate all necessary information, including providing required documentation, to Dealing Firms so that Dealing Firms can perform the necessary tasks to provide credit to the underlying legal entities on behalf of which Non-Dealer Participants intend to be trading.

Non-Dealer Participants should take the appropriate steps to provide their Dealing Firms with the documentation required to complete set up of the trading relationship for FX transactions, including any documentation needed to identify the legal entities on behalf of which the Non-Dealer Participants intend to transact in FX transactions. Non-Dealer Participants should take such steps when initiating trading relationships for FX transactions on behalf of new legal entities, or when expanding existing relationships in other asset classes to cover FX transactions.

It is recommended that Non-Dealer Participants wait to transact in FX transactions until after they have received notice from Dealing Firms that all steps in initiating or expanding trading relationships have been completed.

Trade Execution and Capture

Process Description

The trade execution and capture function is the next phase of the processing flow for FX transactions. FX transactions may be executed through voice or on an electronic platform. Electronic platforms can be proprietary or multi-dealer and can be regulated or not.[5] Information captured for FX transactions typically includes trade date, time of execution, settlement date, counterparty, financial instrument traded, amount transacted, and price or rate.

Recommendation No. 5: Establish Appropriate Trading Policies and Procedures

Non-Dealer Participants should endeavor to execute transactions in FX transactions in a manner which reduces the possibility of mismatches, errors, and unauthorized dealing. Once executed, FX transactions constitute binding obligations of both parties to the transaction. Although subsequent processing steps (e.g., confirmation) may uncover problems, the best protection from unanticipated loss is to avoid problems from the outset.

Transactions in FX transactions should be executed only by internally authorized staff that are experienced and knowledgeable as to market practice and FX transaction terminology. When trades are verbally executed, Non-Dealer Participants should carefully reconfirm key terms with the Dealing Firm prior to ending the call and booking the transaction in their trade capture systems.

Non-Dealer Participants electing to leave orders with Dealing Firms should establish a clear understanding with such Dealing Firms as to how such orders will be handled. Non-Dealer Participants and Dealing Firms should endeavor to clearly agree up front the specific terms of the order, particularly when such orders are to be executed, cancelled or modified by the occurrence of subsequent events. If Dealing Firms are supposed to take certain actions in relation to an order upon the achievement of specific market metrics, then Non-Dealer Participants and the Dealing Firms should agree in advance on the rate or price sources to be used in determining whether such metrics have been met.

Given the 24-hour nature of the market for FX transactions, Non-Dealer Participants should have clear policies and procedures on trading off-premises or off-hours, which may include restrictions on trading. Non-Dealer Participants allowing such trading should consider instituting procedures to ensure that trades executed off-premises or off-hours are promptly entered in their trade capture systems as soon as reasonably possible.

Recommendation No. 6: Clearly Identify Counterparties

Non-Dealer Participants should clearly identify the legal entity on whose behalf they are entering into an FX transaction. Additionally, Non-Dealer Participants should endeavor to obtain the name of the legal

[5] See reference to regulated electronic platforms in Recommendation No. 3.

entity that the Dealing Firm uses as counterparty to the same transaction. A Non-Dealer Participant should have policies and procedures that prohibit trading with a legal entity that has not been authorized internally, even if the Non-Dealer Participant has authorized other legal entities within the same Dealing Firm.

Non-Dealer Participants should ensure that they recognize the importance of clearly and accurately identifying:

- to the Dealing Firm, the legal entities on which behalf the Non-Dealer Participants are entering into an transaction; and
- for themselves, the legal entities serving as their counterparties on behalf of the Dealing Firms for the same transaction.

To facilitate the abovementioned identification, Non-Dealer Participants should encourage their staff (i) to provide their name and affiliation in all communications with Dealing Firms and (ii) to obtain the names and affiliations of the staff transacting on behalf of their Dealing Firms. Clear counterparty identification is particularly important when either the Non-Dealer Participants or the Dealing Firms:

- have multiple legal entities (subsidiaries and affiliates), branches and offices that are trading FX transactions;
- have been involved in acquisition, divestiture or restructuring activity that has led to name changes; and
- are transacting in an agency capacity.

Failure to properly identify the legal entity serving as counterparty to a specific FX transaction potentially raises a number of risks, including:

- incorrect assessment of counterparty performance risk and exposure reporting;
- erroneous bookings and/or misdirected settlements, which could potentially result in a loss for a counterparty to the transaction;
- misallocation of collateral;
- disclosure of transaction information to incorrect entities; and
- inaccuracies in reporting transaction activity to a regulatory body or client.

The practice of trading FX transactions on an unnamed basis, also referred to as undisclosed principal trading, presents an adverse risk to both the individual market participants and the broader financial market. Such practices constrain the ability of a Dealing Firm to assess the creditworthiness of their counterparties and comply with “know your customer” and anti-money laundering rules and regulations – exposing Dealing Firms to clear and significant legal, compliance, credit, and reputational risks and heightening the risk of fraud. It is recommended that both Non-Dealer Participants’ investment advisors and Dealing Firms implement measures to eliminate the practice of trading FX transactions on an unnamed basis. Specifically, Non-Dealer Participants’ investment advisors and FX transaction intermediaries should develop a process to disclose customer names to a Dealing Firm’s credit, legal, and compliance functions prior to the execution of FX transactions. The proper use of LEIs in transactions for specific FX transactions will ensure proper identification of parties to the transaction.

Recommendation No. 7: Establish and Control System Access

As the trading or processing infrastructure for FX transactions continues to evolve in response to regulation and participant needs, rigorous controls need to be implemented and monitored to ensure that data integrity and security are not undermined. Non-Dealer Participants should ensure that only authorized individuals have the ability to alter and/or gain user access to any portion of the trading or processing infrastructure that Non-Dealer Participants employ.

Transactions in FX transactions are frequently executed on electronic platforms, whether due to regulatory imperatives or participant preferences. Electronic execution has been encouraged as it reduces trading- and operations-related errors, particularly when straight-through processing is achieved (*i.e.*, trade data flowing directly from the electronic platform to the front-end trading system and to the operations system books and records).

To continue maximizing the benefits of electronic execution, Non-Dealer Participants should ensure that access to applicable production systems should be given only to those individuals who require such access to perform their job function. Lack of adequate access controls and related monitoring can result in unauthorized trading activity. Without proper access control, the flow of data between the electronic platform and the front-end trading system or operations system books and records can be altered, compromising data integrity and subjecting the Non-Dealer Participant to a risk of financial loss.

Non-Dealer Participants should periodically review system access and entitlements, and should revoke the access of users who no longer require such access to perform their job function. Under no circumstance should operations or trading personnel have the ability to modify a production system if they are not authorized to do so.

Recommendation No. 8: Enter Trades Immediately

Non-Dealer Participants should ensure that, as soon as FX transactions are executed, their terms are immediately entered into appropriate systems and are accessible for both trading and operations processing. Non-Dealer Participants should have internal policies and procedures guiding immediate trade-entry or capture of transactions. Adherence to these policies may be subject to internal audit, regulatory or review.

It is crucial that Non-Dealer Participants immediately enter all transactions in FX transactions into appropriate systems, so that all relevant systems and processes are provided with and can function based on timely, updated information. For example, front-end systems that capture transaction information may interface with other systems that monitor and update credit limit usage, intra-day P&L, trader positions, confirmation status, settlement instructions, and general ledger activity. Non-Dealer Participants should strive to work with Dealer Firms to leverage straight-through processing capabilities and avoid manual intervention

The ability of a Non-Dealer Participant to manage risk may be adversely affected if it does not have accurate transaction updates for each of the systems mentioned above. The failure to immediately record FX transactions misrepresents contractual positions and can result in:

- inaccurate accounting records;
- mismanagement of market risk;
- misdirected or failed settlement; and
- the failure of a trade to be booked at all.

Confirmation

Process Description

The transaction confirmation is evidence of the terms of an FX transaction. Therefore, proper management of the confirmation process is an essential control. This process is handled in several different ways, depending on the type of FX transaction. For spot, forward FX, or vanilla currency option transactions, counterparties generally exchange or match electronic or paper confirmations that identify the transaction details and provide other relevant information. For other transaction-types, for example non-deliverable forwards (NDFs), exotic currency option transactions or structured and non-standard transactions, documents may be prepared and either: 1) exchanged or matched by both counterparties; or 2) signed and returned.[6]

All confirmations should either be subject to the *1998 FX and Currency Option Definitions* issued by the Foreign Exchange Committee, Emerging Markets Traders Association (EMTA), and International Swaps and Derivatives Association (ISDA), which may be supplemented by EMTA terms, for NDFs and options, or other relevant terms set forth by applicable market infrastructure (*e.g.*, regulated electronic platforms).

Recommendation No. 9: Confirm Trades Immediately

Non-Dealer Participants should make every effort to confirm trades in FX transactions within two hours after execution and in no event later than the end of the day on the trade date. In cases where the confirmation is not automated (as described below) trades should be confirmed as soon as possible and no later than the end of the day following execution.

Prompt confirmations are key to the orderly functioning of the marketplace for FX transactions because they reduce market risk and minimize the risk of loss due to settlement errors. In the absence of timely confirmation, trade discrepancies may go undetected, potentially leading to disputes, disrupting the settlement process and increasing processing costs. It can also result in failed trades or inaccurate accounting records, and can adversely affect any underlying transaction. Given the significance of the confirmation process, it is important that the process is handled independently of the trading function.

Non-Dealer Participants should understand the confirmation practices for each Dealer Firm that they transact with and for each relevant FX transaction category including, for example, whether for a particular transaction: (i) both parties will use an electronic means of confirmation; (ii) each party will send out its own paper confirmations; or (iii) Non-Dealer

[6] Typically, the Dealing Firm prepares the confirmation and the Non-Dealer Participant signs the confirmation.

Participants will sign and return incoming confirmations from the Dealer Firm. It is not recommended that the Non-Dealer Participant simply accept receipt of its counterparty's confirmation as completion of the confirmation process.

Confirmations should be transmitted in a secure manner whenever possible. Automated confirmations match one party's trade details to its counterparty's trade details, or are formed by acceptance of terms online. Automated confirmation minimizes manual error and is the most timely and efficient method of confirmation because it requires no subsequent confirmation or manual check. FX transaction confirmations may also be formed using methods agreed by the parties, either explicitly or by their course of conduct, which may include e-mail or fax. It is important to note that when these open communication methods are used there is a greater risk of human error, fraudulent correspondence or disclosure of confidential information to unauthorized parties. When sending confirmations for FX transactions by fax, or e-mail, Non-Dealer Participants should take additional steps to assure receipt by the correct Dealing Firm.

Data included in a confirmation should contain, at a minimum, the following: (i) the names of the legal entities that are serving as counterparties to the transaction in FX transactions and the obligation/role of each of the counterparties; (ii) any branch or office through which each legal entity is acting; (iii) the transaction date (or trade date); (iv) the value date (or settlement date); (v) the amounts of the currencies being bought and sold; (vi) the settlement instructions; and (vii) any term that a confirmation is explicitly required to contain by statute, regulation, or other pronouncement with similar legal force required of the Non-Dealer Participant or Dealing Firm. Confirmations that are amended to correct errors should be sent promptly, if they are necessary. Settlement instructions for FX forward transactions should be reconfirmed between the parties to the trade two days before the value settlement date.

Once a trade between counterparties has been confirmed, such trades may be the subject of novation or other similar agreements, which should be confirmed in a similarly vigorous manner.

Recommendation No. 10: Allocation of "Block" Transactions

The block transaction details should be reviewed and affirmed to the dealer by agents as soon as possible following execution, ideally within two hours of execution. Furthermore, agents should allocate the block transaction within eight hours following execution.

Investment managers or others acting as agent on behalf of multiple counterparties may undertake "block" transactions that are subsequently allocated to specific underlying counterparties. In such cases, agents should provide dealer-counterparties an indication prior to execution that a transaction will be allocated. Agents should review and affirm the details of the block (pre-allocation) transaction as soon as possible following execution, ideally within two hours of execution. Each underlying counterparty in a block transaction must be an approved and existing counterparty of the dealer-counterparty prior to allocation. Agents should allocate the full amount of the block transaction as soon as possible, no later

than eight business hours following execution. Each post-allocation transaction must be advised to the dealer-counterparty and confirmed promptly, in accordance with the timing requirements set forth in applicable confirmation rules.

The failure to allocate a transaction on a timely basis could result in increased credit, legal, regulatory and operational risk. Specifically, a delay in allocation hampers the management of credit exposure. Trade confirmations may also be delayed, which in turn may create regulatory issues, interrupt the settlement process, and, in extreme cases, cause payment failures. To minimize errors caused by manual intervention, trade allocations should, if possible, be provided to the Dealing Firm electronically through secure networks or authenticated means.

Recommendation No. 11: Identify and Resolve Confirmation Discrepancies in a Timely Manner

Discrepancies between a confirmation received from a dealer and a Non-Dealer Participant's own records should be brought to the dealer's attention immediately. Escalation procedures should be established to resolve any unconfirmed or disputed terms as a matter of urgency.

Unintended exposure to market risk may arise when trade discrepancies exist. Trade discrepancies may also lead to increased processing costs, inaccurate accounting records, failed settlements including underlying hedged assets or liabilities and financial loss. Unconfirmed trades may result from simple trade entry errors, more serious disagreements between counterparties with respect to the agreed transaction terms, or inaccurate or inconsistent settlement instructions.

To mitigate this risk, confirmation discrepancies should be brought to the dealer's attention immediately and resolved as quickly as possible. Additionally, procedures should be established to escalate unresolved discrepancies to increasingly higher levels of management in accordance with regulatory time frames[7]. Automated trade confirmation systems are strongly recommended if available through your dealer. These systems can highlight discrepancies and mitigate potential problems. Processes should be in place to detect repetitious discrepancies.

Recommendation No. 12: Unique Features of Foreign Exchange Options

Market participants should establish clear policies and procedures for the confirmation, exercise, and settlement of foreign exchange options and to familiarize staff with the additional terms and conditions associated with options in order to reduce operational risk.

Foreign exchange options are more complex products than spot and forward transactions. Options incorporate additional and often complex contract terms (such as strike price, call or put indicator, premium price, and expiry date and time). Their value is determined not only by spot and forward exchange rates, but also by implied

[7] For example, U.S. swap dealers are subject to regulatory timeframes for delivery, and in addition, must institute policies and procedures reasonably designed to ensure confirmations are formed or returned by counterparties within prescribed timeframes. As such, confirmation delay may result in dealer chasing and escalation, regulatory reporting, and may possibly impact ability to trade (*see, e.g.,* 17 CFR pt. 23.501 (2012)).

volatilities and time remaining until expiration.

Option values may change rapidly and in a non-linear manner. Management should clearly define FX options trading roles and responsibilities to ensure that the higher inherent risk of options is well controlled. Operations staff should be fully versed in options terminology, contract provisions and market practice. All transaction terms should be confirmed on the trade date electronically or in writing in accordance with regulatory time frames. Certain exotic options may also require the collection of additional information or rates, depending on the product.

Options premium settlements should be closely monitored to reduce the potential for out-trades.

Options possessing value at expiration ("in-the-money") must be properly exercised if such value is to be realized. The exercise of an option generally creates a new position in the underlying instrument (e.g. spot dollar-yen) requiring further processing and settlement. Special attention should be paid to the sale of options (naked short positions) which generally entail significantly higher levels of market risk. Clear policies and procedures relating to options exercise should be established and, where possible, systems should be designed to auto-exercise expiring in-the-money options.

Recommendation No. 13: Unique Features of Non-Deliverable Forwards

Non-Dealer Participants should establish clear policies and procedures for the confirmation and settlement of foreign exchange non-deliverable forwards (NDFs) and familiarize staff with the additional terms and conditions associated with NDFs, in order to reduce operational risk.

NDFs are cash-settled FX forward transactions that require a rate fixing to determine the amount and direction of the cash settlement. NDFs, much like FX options, also have additional trade terms and require additional handling and processing. In addition, NDF transactions may be more susceptible to market disruptions. Where possible, Non-Dealer Participants are encouraged to sign a Master Confirmation Agreement (MCA) for NDFs.

Even with an MCA in place, counterparties should confirm NDF transaction terms in accordance with stipulated regulatory time frames. In addition to the standard transaction details (such as the counterparties and the office or legal entity through which each are acting, the transaction date, the notional amounts of the currencies, and the settlement instructions), NDFs require additional trade terms that require confirmation, such as the fixing source and fixing date.

Netting and Settlement

Process Description

Settlement is the making of payments or exchange of payments between counterparties on a FX transaction's settlement date.

With respect to FX transactions consisting of two payment flows at settlement, settlement risk (also referred to as "principal risk" or "Herstatt Risk") is the risk that one party to an FX transaction makes its payment to its counterparty but does not receive the payment it expects from its counterparty, resulting in the outright loss of the full value of the transaction. This could cause a large, even catastrophic, loss. This risk is particularly significant in the FX market given the size of the notional amounts being exchanged, and arises in FX trading because the making of a payment in one currency and receipt of the counter-currency payment do not always occur simultaneously. Settlement risk is measured as the full amount of the currency purchased and is considered at risk from the time a payment instruction for the currency sold becomes irrevocable until the time the final receipt of the currency purchased is received with finality.[8] Sources of settlement risk include internal procedures, intra-market payment patterns, the finality rules applying to local payment systems, and the operating hours of the local payment systems.

There are various methods by which settlement risk can be mitigated. One of these, payment-versus-payment (PvP) settlement, ensures the final transfer of a payment in one currency only if a final transfer of a payment in another currency occurs. In a basic PVP arrangement, a trade will settle only if each counterparty pays the correct amount. If a party fails to pay, its counterparty will receive back the currency it was selling, thus providing protection mitigating against settlement risk. Certain market infrastructures exist that provide PvP settlement.[9] PvP settlement mitigates the risk that one side of an FX transaction is settled with finality without the corresponding other side also being settled with finality and ensures that the principal amounts involved are protected.[10] PvP arrangements could also involve bilateral agreements between counterparties that call for settlement to occur on a PvP basis.

Bilateral obligation netting is another method by which parties may manage settlement risk. Bilateral obligation netting is the practice of offsetting all currency payment obligations due between two counterparties on a particular settlement date to calculate a single net payment in each currency. If, for example, a Non-Dealer Participant executes twenty-five trades in dollar-yen with the same dealer, all of which settle on the same day, bilateral obligation netting will enable each institution to make only one netted payment per currency. By establishing bilateral obligation netting agreements with dealers, Non-Dealer Participants can thus reduce the value of their payments exposed to settlement risk and operational risk. Correct calculations as to netted payments

[8] For additional information on settlement risk, please see the February 2013, Basel Committee on Banking Supervision "Supervisory Guidance for Managing Risks Associated with the Settlement of Foreign Exchange Transactions", available at: http://www.bis.org/publ/bcbs241.htm, (the "BCBS Paper"), as well as the following: Foreign Exchange Committee, "Defining and Measuring FX Settlement Exposure," in *The Foreign Exchange Committee 1995 Annual Report* (New York: Federal Reserve Bank of New York, 1996), and Foreign Exchange Committee, "Reducing FX Settlement Risk," in *The Foreign Exchange Committee 1994 Annual Report* (New York: Federal Reserve Bank of New York, 1995).

[9] One example is CLS Bank International, a financial market utility. CLS Bank International operates the world's largest multicurrency cash settlement system, mitigating settlement risk in respect of FX transactions of CLS Bank's members and their customers. CLS Bank was established by the private sector, in cooperation with a number of central banks as a PvP system to reduce the principal risk arising from settlement of FX transactions.

[10] The BCBS Paper promotes the use of financial market infrastructures that provide PvP settlement by dealers where practicable.

are important, to ensure accurate settlement amounts and enhance efficiency of operations.

Recommendation No. 14: Mitigate Settlement Risk and Confirm Bilateral Amounts

Non-dealer market participants should mitigate and manage settlement risk and confirm any netted payment amount with their dealers.

Bilateral settlement on a gross basis can involve large values and a high number of settlements, increasing settlement risk as well as the probability of settlement errors.

Non-Dealer Participants should ensure they have a properly managed settlement function which includes staff who are well-versed in settlement risk and the issues associated with that risk and, wherever possible, arrange for bilateral obligation netting and/or PvP settlement to reduce or eliminate settlement risk.

The operational processes around bilateral obligation netting should be supported by an enforceable legal agreement. This has the benefit of entitling the parties to reduce the number and size of payments between themselves, thereby mitigating amounts exposed to settlement risk.
If an error occurs in the settlement process, this can be costly. For example, if a Non-Dealer Participant fails to make a payment, it this may lead to an event of default, a requirement to compensate the counterparty, or otherwise generate additional expense. Settlement errors may also cause a Non-Dealer Participant institution's cash position to be different than expected. Non-Dealer Participants are encouraged to automate bilateral obligation netting calculations so that errors which can occur due to manual calculation are reduced. To protect against an improper settlement of a net amount, Non-Dealer Participants should confirm such netted payment amounts with their Dealer Firms at some predetermined cut-off time prior to settlement.

Recommendation No. 15: Provide Settlement Instructions and Use Standing Settlement Instructions

Non-Dealer Participants should always provide complete and accurate settlement instructions on a timely basis. Standing settlement instructions (SSIs) should be exchanged whenever possible. Non-Dealer Participants should issue new SSIs, as well as notify changes to SSIs to their dealers, in a secure manner.

Settlement instructions should clearly reference the following information:

- The recipient's account name, account address, and account number;
- The name of the receiving bank, a SWIFT/ISO address and a branch identifier; and,
- The identity of any intermediary bank used by the recipient.

Incomplete or inaccurate settlement instructions heighten the risk of a disrupted settlement process, inflating processing and compensation costs. Failed FX settlements may also disrupt completion of an underlying transaction.

SSIs allow for complete trade details to be entered quickly, so that the confirmation process can begin as soon after trade execution as possible. In contrast to

exchanging settlement instructions on a trade-by-trade basis, SSIs minimize the potential for incorrect or incomplete settlement instructions. SSIs also contribute to improved risk management and greater efficiency, as repetitious manual inputting, formatting, and confirming settlement instructions increases the cost of trading processing and heightens the opportunity for errors in settlement.

Non-Dealer Participants should deliver SSIs to their Dealing Firms at the time of establishing the trading relationship. When a Non-Dealer Participant changes its SSIs, it should provide as much lead time as possible to its Dealing Firms so that they can update their records before the date that the new SSIs become effective. Non-Dealer Participants should update their records promptly when changes to SSIs are received from their Dealing Firms.

All SSIs should be delivered electronically, if possible, and preferably through authenticated media, as electronic delivery minimizes manual error and is the timeliest method of delivery. In addition, authenticated media reduce the potential for fraud. Changes to SSIs that cannot be delivered electronically should be delivered in writing and signed by an authorized individual.

Although SSIs are preferred, they are not always available, and at times SSIs may not be appropriate for all trades. When SSIs are not used, the settlement instructions may be recorded at the time of trade execution. These “exception” settlement instructions should be delivered by the close of business on the trade date for FX spot or at least one day prior to settlement for FX forwards.

Recommendation No. 16: Request Direct Payments

Non-Dealer Participants should request direct payments when conducting FX transactions and recognize that third-party payments may significantly increase operational risk and potentially expose all parties involved to money-laundering or other fraudulent activity.

Third-party payments are the transfer of funds in settlement of a FX transaction to the account of an entity other than that of the counterparty to the transaction. Third-party payments raise important issues that should be carefully considered by a Non-Dealer Participant requesting such a practice. The practice also heightens the risk of financial loss; if the third-party payment is directed to an incorrect beneficiary, the payment may be delayed or even lost. Third-party payments may also create potential legal liability for the dealer making the payment.

Both Non-Dealers Participants and Dealing Firms should be aware of the risks involved with these third-party payments and should establish clear procedures beforehand for validating both the authenticity and correctness of such requests. If a third-party payment must be requested despite the risks, Non-Dealer Participants should provide dealers any written information required to screen, internally review and approve, and accurately make the third-party payment (for example, the third-party’s receiving bank name and address, the third-party account’s name, address and account number, and the nature of the third-party’s affiliation with the Non-Dealer Participant).

Additionally, third-party payment instructions should be provided via authenticated means. Instructions otherwise provided, for example by phone or fax, should be reconfirmed by staff independent of those providing such instructions.

Account and Portfolio Reconciliation

Process Description

Account reconciliation occurs at the end of the trade settlement process to ensure that a trade has settled properly and that all expected cash flows have occurred. An institution should begin reconciliation as soon as it receives notification from its bank that payments have been received. If possible, reconciliation should be performed before the payment system associated with each currency closes. Early reconciliation enables an institution to detect any problems in cash settlement and resolve them by the settlement date.

Portfolio reconciliation can occur at various frequencies, depending on the size and nature of an institution's portfolio, and/or applicable regulatory requirements. Portfolio reconciliation is intended to ensure that a firm's books and records are consistent with those of its counterparties, and accurately reflect the occurrence of trade events such as novations, amendments and other trade-related activities. Periodic portfolio reconciliation enables an institution to identify discrepancies relating to the terms of its transactions and resolve any such discrepancies with its counterparties in a timely fashion to avoid mismatches and disputes.

Recommendation No. 17: Perform Timely Account and Portfolio Reconciliation

Account reconciliation – the process of comparing expected and actual cash movements – should be performed as early as possible. Portfolio reconciliation – the process of comparing the terms of a firm's transactions with those of its counterparties – should be performed on a periodic basis in accordance with applicable law.

The main objective of the account reconciliation process is to ensure that expected cash movements agree with the actual cash movements in a firm's currency accounts. The cause for the difference might be that wrong settlement or trade information was captured or that a payment error has occurred.

Failure to reconcile expected and actual cash movements could result in an inability to recognize an under-funding of transaction and/or an overdraft to the cash account. Overdraft charges may be imposed unknowingly when positions are under-funded. Account reconciliation also serves as a main line of defense in detecting fraudulent activity.

Non-Dealer Participants are encouraged to reconcile expected cash flows against actual cash flows on a timely basis. The sooner reconciliations are performed, the sooner an institution knows its true account balances so that it can take appropriate actions to ensure that its accounts are properly funded.

The main objective of the portfolio reconciliation process is to ensure that a firm's books and records are consistent with those of its counterparties and reflect the occurrence of any trade-related events,

such as novations and amendments, so that a firm understands its obligations under transactions it has entered into with its counterparties. Failure to perform portfolio reconciliation could result in discrepancies in material terms of a firm's transactions, such as valuation, notional value, payment or settlement dates, or relevant fixing rate. Failure to perform portfolio reconciliation could also result in non-compliance with applicable regulatory requirements.

Recommendation No. 18: Identify Nonreceipt of Payments and Submit Compensation Claims in a Timely Manner

Management should establish procedures for detecting non-receipt of payments and for notifying appropriate parties of these occurrences. Escalation procedures should be in place for dealing with counterparties who fail to make payments. Parties that have failed to make a payment on a settlement date should arrange for proper value to be applied and promptly pay compensation costs.

Non-Dealer Participants should attempt to identify, as early in the process as possible, any expected payments that are not received. Failure to notify counterparts of problems in a timely manner may lead them to dismiss claims that are over a certain age, causing the institution to absorb overdraft costs.

All instances of non-receipt of payment should be reported immediately to the counterparty's operations and/or trading units. When necessary, escalation procedures should be followed. Management may wish to consider a limited dealing relationship with counterparties who have a history of settlement problems and continue to fail on their payments. The counterparty that has not received payment generally incurs the costs associated with nonreceipt, including obtaining alternative funding on the settlement date and the added expenses of exception processing and administering payment, and as a result, may commence legal action to recover these costs. Compensation claims for nonreceipt, or late receipt of payment, should be agreed and paid expeditiously.

Accounting and Control

Process Description

The accounting function ensures that FX transactions are properly recorded to the balance sheet and income statement. If transaction information is not recorded correctly, a company, client or portfolio's reputation may be impaired if material restatements of financial accounts are necessary.

Accounting entries are first booked following the initiation of a trade. At the end of each trade day, all sub-ledger accounts flow through to the general ledger. Non-Dealer Participants should reconcile their positions in a portfolio with a custodian, adviser and/or counterparties as applicable. . Any discrepancies should be investigated as soon as possible to ensure that the institution's books and records reflect accurate information. The accounting area should ensure that outstanding positions are continually marked to market until close-out – after which realized gains and losses are calculated and reported.

Cash flow movements that take place on settlement date are also posted to the general ledger in accordance with accepted accounting procedures. The receipt and

payment of expected cash flows at settlement are calculated in an institution's operations system.

Recommendation No. 19: Conduct Daily General Ledger, Position, and P&L Reconciliation

Systematic reconciliations of 1) the general ledger to the operations system of 2) trading systems to the operations systems and 3) Non-Dealer participant portfolio positions to external parties should be performed daily.

Timely reconciliations will allow for prompt detection of errors in the general ledger and/or sub-ledgers and should minimize accounting and reporting problems. This reconciliation will ensure that the general ledger presents an accurate picture of an institution's market position. When problems are detected, they should be resolved as soon as possible. Senior management should be notified of accounting discrepancies to review and update control procedures as needed.

Position reconciliations allow an institution to ensure that all managed positions are the same as those settled by operations. This control is imperative when all deal entries and adjustments are not passed electronically between trading and operations. When straight-through processing is in place, the reconciliation ensures that all deals were successfully processed from trading to operations, along with all amendments. Because a discrepancy in profit and loss between trading and operations can indicate a difference in positions or market parameters (that is, rates or prices) all differences should be identified, investigated, and resolved in a timely manner. Systematic and timely reconciliation of currency balances and positions will help to ensure proper accounting, Net Asset Value (NAV), and client reporting.

Recommendation No. 20: Conduct Daily Position Valuation

Outstanding positions should be revalued to market daily by staff independent of the trading function using independent price sources This is particularly important for market participants that are active in less liquid forward markets or in exotic options markets. Both trading and operations staff should be familiar with the procedures used for position valuation.

The daily revaluation of outstanding positions is an integral part of the control process; thus, it is important for the calculation to be correct. The identified and agreed upon rates and prices that are used to create the position valuations should be periodically checked by an independent source. Staff independent of the trading function should check that the rates and prices used for end-of-day valuation are representative of market rates. Position valuations should be verified using independent sources such as market rate screens or broker/dealer quotations.

Illiquid markets present additional risk to an institution because illiquid instruments are infrequently traded, making them difficult to value. Often, it is difficult to obtain market quotes, thereby preventing timely and consistent position monitoring. Valuations may be distorted and risk may not be properly managed. In such instances, a Non-Dealer Participant should seek to obtain quotes from other counterparties active in the market.

Organizations may establish internal global pricing committees to help assess and address valuation issues.
Marking-to-market reflects the current value of FX cash flows to be managed and provides information about market risk.[11] Senior management will be able to better manage and evaluate market positions when they know positions are accurately valued on a daily basis.

Other

Recommendation No. 21: Develop and Test Contingency Plans

Non-Dealer Participants should develop plans for operating in a "Business as Usual" (BAU) environment in the event of an emergency. Contingency or business continuity plans (BCPs) should be periodically reviewed, updated, and tested. Where possible non dealer participants should store and maintain all of its BCPs in a secure, central location that is globally accessible by firm personnel.

The key risk of a major disaster is that a Non-Dealer Participant may not be able to meet its obligation to monitor its market positions, confirm or settle transactions. Failure to be able to trade or settle transactions could subject the Non-Dealer Participant or its counterparties to severe financial hardship and non-dealer to reputational repercussions.

Non-Dealer Participants should identify various types of potential disasters and identify how each may prohibit the Non-Dealer Participant from satisfying its obligations (that is, issuing and receiving confirmations, performing settlements, and completing daily trading). Disaster recovery plans should identify requisite systems and procedural backups, management objectives, staffing plans, and the methodology for dealing with each type of disaster. Plans should be reviewed and tested periodically.

Backup sites that can accommodate the essential staff and systems should be established, maintained, and tested on a regular basis. Particularly for operations, Non-Dealer Participants should consider developing a backup site that relies on a separate infrastructure (electricity, telecommunications, etc.) and that is in a separate location from the main site.

Additionally, all Non-Dealer Participants should identify and practice alternative methods of trading, confirmation and settlement communication with their counterparties. These methods should be secure in nature and may require the use of electronic mail, PDF, fax or a recorded telephone line (or a combination thereof) to ensure proper processing. During a disaster, a Non-Dealer Participant should notify its counterparties of potential processing changes. Non-Dealer Participants should also provide counterparties with current contact information for key personnel to ensure that counterparties can contact the Non-Dealer Participants in an emergency. These contact lists should be reviewed and updated periodically as part of the overall BCP review.

[11] Group of Thirty, Global Derivatives Study Group, *Derivatives: Practices and Principles* (Group of Thirty, 1993), p.19.

Recommendation No. 22: Ensure Service Outsourcing Conforms to Best Practices

If a Non-Dealer Participant chooses to outsource all or a portion of its operational functions, it should ensure that its internal controls and industry standards are met. A Non-Dealer Participant that outsources it functions should have adequate operational controls in place to monitor that the outsourcer is performing the functions according to agreed-upon standards and industry best practices.

A Non-Dealer Participant may choose to outsource some or all of its operations functions. However, outsourcing should in no way compromise a Non-Dealer Participant's firm's internal standards for confirmations, settlement and payments, reporting requirements, and reconciliations and other operational functions and should not diminish the responsibility of the Non-Dealer Participant to satisfy its regulatory and contractual obligations.

Controls should be in place to monitor vendors to ensure that internal standards are met. For example, trades should still be confirmed in a timely manner and proper escalation and notification procedures must be followed.

Non-Dealer Participants should establish procedures to periodically monitor and confirm that service providers are performing functions according to agreed-upon standards and industry best practices. A service level agreement should be in place to clearly identify responsibility in the case of a failure to meet obligations.

These Recommendations have been prepared by the Foreign Exchange Committee in order to provide general information about foreign exchange [(including foreign exchange] derivative transactions), and "best practice" recommendations for the purpose of the benefits specified in the Introduction, and should not be treated or relied upon as legal, regulatory, tax, accounting or investment advice. Many foreign exchange (including foreign exchange derivative transactions) and their related activities are subject to laws, regulations, rules and directives that can be complex and that vary depending upon jurisdictional requirements, entity types, location, transaction type and other factors ("Legal Requirements"). In particular, many Legal Requirements have been recently introduced, and continue to be introduced, modified and refined in many jurisdictions as part of ongoing reform and strengthening of financial markets. These Recommendations do not address or take into consideration all Legal Requirements that may apply to Non-Dealer Participants. All market participants should understand the legal and regulatory framework under which they operate in the foreign exchange and derivative markets.

Acknowledgments

This document was originally completed in 1998 thanks to a task force of individuals representing various institutions on the Foreign Exchange Committee and the Operations Managers Working Group. That task force included:

Charles LeBrun Bank One	Philip Scott Bank of New York	Kathryn Wheadon Bank of America

The task force for the 2004 revision included:

Joe Demetrio Bank of New York	Laura Huizi Federal Reserve Bank of New York	Sandra Galarza Bank of New York
Barry McCarraher HSBC	Keith McDonald CSFB	Michael Nelson Federal Reserve Bank of New York
Nancy Riyad HSBC	Richard Rua Mellon Bank	Dan Ruperto Goldman Sachs
Rob Toomey Federal Reserve Bank of New York	Diane Virzera Federal Reserve Bank of New York	

The task force for the 2015 revision included:

Adnan Akant Fischer Francis Trees and Watts	Martha Burke Wells Fargo	Jason Cronin Wellington Management Company LLP
Victoria Cumings CLS	Michael Debevec Blackrock	Pamela Hutson US Bank
Tahreem Kampton Microsoft	Lisa Kraidin Federal Reserve Bank of NewYork	Richard Maling State Street
Ken Rozycki Brown Brothers Harriman	Christopher Vogel Blackrock	Olivia Wang Morgan Stanley

Recommended Reading

"Guidelines for the Management of FX Trading Activities." New York: Foreign Exchange Committee, 2010.

"Management of Operational Risk in Foreign Exchange." New York: Foreign Exchange Committee, 2013.

Bank for International Settlements. *Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity 2013*. Basel: BIS, 2013.

"Final Report on Foreign Exchange Benchmarks." Basel: Financial Stability Board, 2014.

"Global Preamble: Codes of Best Market Practice and Shared Global Principles." Tokyo: Australian Foreign Exchange Committee, Canadian Foreign Exchange Committee, ECB's Foreign Exchange Contact Group, Hong Kong Treasury Markets Association, London Foreign Exchange Joint Standing Committee, New York Foreign Exchange Committee, Singapore Foreign Exchange Market Committee, Tokyo Foreign Exchange Market Committee, 2015.

"Fair and Effective Markets Review Final Report." London: Bank of England, Financial Conduct Authority and HM Treasury, 2015.