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THE FOREIGN EXCHANGE COMMITTEE 1997 ANNUAL REPORT

CHAIRMAN'S REPORT

The Foreign Exchange Committee reached several important milestones in 1997. As part of its ongoing effort to forge closer links with international bodies that share a similar mission, the Committee held a meeting overseas for the first time in its history. In November, Committee members traveled to Singapore for a joint meeting with the Singapore Foreign Exchange Market Committee to discuss recent market developments and to address industry issues of mutual concern. Domestically, in February, the U.S. Supreme Court rendered a decision in the case of William C. Dunn v. The Commodities Futures Trading Commission that validated many of the views expressed by the Committee in its 1996 amicus brief for the case. The Dunn decision marks an important step in providing legal certainty for foreign exchange trading in the United States. In the interest of improving its internal operation, in 1997 the Committee instituted a new organizational structure that replaced the standing subcommittees with adhoc working groups. This reorganization has given the Committee greater flexibility in responding to industry issues and in mobilizing the Committee's expertise and resources accordingly. Finally, the Committee continued existing projects and initiated new endeavors in the areas of trading practices, market structure, and risk management, while devoting considerable attention to the ongoing market developments that made 1997 a memorable year in foreign exchange.

The joint meeting with the Singapore Foreign Exchange Market Committee proved to be one of the highlights of the Committee's year. The early November meeting was especially timely given the intensity of market attention on developments in Southeast Asia and Korea. Members of the Singapore Committee led a market discussion outlining the events leading up to the turmoil in the region, and members from New York shared their experiences in coping with similar Latin American crises. The two Committees also compared their research findings on the effects of electronic broking on the structure of the foreign exchange market. The works shared many observations, including a narrowing in interbank spreads, an increase in price transparency, and greater competitive pressures on the voice brokers. The day after the Singapore meeting, the Committee's Operations Managers Working Group presented its paper "Management of Operational Risks in Foreign Exchange." By the standing-room only attendance and the spirited question and answer session that followed, it was clear that the Singapore community shares the Committee's interest in this critical topic. Rapid global integration and recent market developments underscore the importance of establishing close relationships with organizations that seek to promote a smoothly functioning foreign exchange market. The Committee hopes that the success of this meeting will foster greater communication between Singapore and New York, and will serve as an impetus to forge closer links with similar organizations around the world.

One of the most significant events of the year was the Supreme Court's decision in the Dunn case. The Committee has long maintained that the so-called Treasury Amendment excludes from coverage under the Commodity Exchange Act (CEA) activities of foreign exchange dealers entering into over-the-counter foreign exchange transactions—including over-the-counter foreign exchange options. The opinion delivered by the Court closely parallels key positions advanced by the Committee in its 1996 amicus brief on the subject. Also during the year, on two occasions I had the privilege of representing the Committee before the U.S. Congress on proposed modifications to the Treasury Amendment. While there, I articulated the Committee's strong support of the revisions as a major step in providing legal certainty for foreign exchange markets in the United States. The Committee will continue to monitor ongoing developments related to the Treasury Amendment in an effort to ensure that any revision provides all types of foreign exchange transactions, including foreign exchange options, with the broadest exclusion from CEA coverage.

The Committee's 1997 structural changes involved its meeting schedule and organization. Reflecting the increasing seniority of members within their firms, as well as the greater geographic dispersion of the membership, the Committee reduced the number of meetings per year from ten to eight. Given the abbreviated schedule, the Committee strove to make each meeting more issue-oriented, focusing on particular subjects such as the technical issues associated with European Economic and Monetary Union (EMU), the growing interest in contracts for differences as a mechanism to reduce foreign exchange settlement risk, and efforts to standardize market practices and promote transparency in emerging markets. At the same time, the Committee decided to organize itself around adhoc working groups, formed in response to particular issues as they arise, rather than around standing subcommittees. The Committee also formalized its relationship to the Operations Managers Working Group and the Risk Managers Working Group by designating liaisons to each body. These structural modifications have enhanced the Committee's work by permitting greater flexibility in allocating the Committee's resources to particular issues and by fostering greater communication between the working groups and the Committee.

The year also proved to be one of exceptional productivity for the Foreign Exchange Committee:

- The Operations Working Group published "Managing Operational Risk in Collateralized Foreign Exchange," a report highlighting best practices to reduce operational risks in this rapidly growing business.

- The Committee completed a paper initiated in 1996 assessing the impact of electronic broking on the foreign exchange market. The Committee envisions this paper as the first in a series of publications that will address the ongoing effects of technology on the marketplace.
- The Committee's electronic broking survey highlighted a need to establish standard market practices and conventions for electronic trading. The Committee issued a letter related to this subject advising dealers of the increased risks and obligations of holding stop-loss orders in an environment in which trades may be matched twenty-four hours a day, seven days a week. The Committee intends to include the advice contained in this letter, as well as other measures, in its next revision to "Guidelines for Foreign Exchange Trading Activities," which was last updated in 1996.
- The Financial Markets Lawyers Group, in a joint endeavor with the International Swap and Derivatives Association and the Emerging Markets Traders Association, developed a set of FX and Currency Option Definitions that standardize trading documentation for nondeliverable forwards and related emerging market transactions. Supplementing the Definitions, the FMLG published addenda to the Foreign Exchange and Options Master Agreement, the International Foreign Exchange Master Agreement, and the International Currency Options Market Master Agreement that coordinate use of the Definitions with these documents.

We present these publications and letters as part of the *Annual Report's* selected documents, and trust that they will provide value to market participants and encourage productive discourse.

In addition to distributing formal publications in 1997, the Committee sponsored a series of seminars to increase public awareness and understanding of the Committee's work. Early in the year, as part of its ongoing commitment to help foreign exchange market participants reduce settlement risk, the Committee presented its 1996 paper "Guidelines for Foreign Exchange Settlement Netting" to audiences in New York and London. Meanwhile, in June, the Committee served as a joint sponsor, with the International Swap and Derivatives Association and the New York State Bar Association, of a forum at the Federal Reserve Bank of New York on the impact of EMU on U.S. financial markets. The forum's primary purpose was to educate U.S. participants on the operational, technical, and legal challenges posed by monetary union, and featured representatives from the Bundesbank, the Banque de France, the Bank of England, and the European Monetary Institute, among others. The Committee intends to build on these efforts by hosting a similar forum on EMU in 1998.

The Committee also launched a number of initiatives that will carry over into next year. The most prominent of these efforts relates to the Committee's ongoing interest in settlement risk. During the course of the year, the Committee received periodic updates on the progress made by the Group of Twenty in developing a continuous linked settlement (CLS) system that incorporates the most advanced delivery versus payment settlement methods. The CLS approach addresses the settlement risk issue from the perspective of the payments system, leaving existing front-office trading conventions intact. The Committee also examined two alternative netting mechanisms that would alter conventional trading practices—netting plus, which makes use of a series of tom-next swaps to reduce bilateral settlement exposure, and the creation of a foreign exchange derivative contract for differences (CFD). Interest in CFDs has been sparked by the recognition that cash delivery is required in only a small percentage of foreign exchange transactions. Rather than settling underlying currencies in a transaction, a viable CFD market would permit market participants to settle only the mark-to-market difference between the contract rate and the fixing rate, potentially providing a cost-effective means to reduce settlement risk substantially. Under its revised organizational structure, the Committee formed an adhoc working group to assess the viability of CFDs as an alternative mechanism for reducing foreign exchange settlement risk. The group anticipates presenting its conclusions to the Committee in 1998.

As always, the Committee also devoted considerable attention in 1997 to ongoing market developments. Anticipation of EMU, the deterioration of economic and financial conditions in Japan, and the turmoil in Southeast Asia and Korea provided rich material for stimulating market discussions. Despite the extreme volatility associated with many of these events, particularly the Asian crisis, the foreign exchange market cleared huge volumes without complication. This performance suggests that structural improvements advocated by the Committee with respect to documentation, netting, and operations have proved their worth.

As the Committee prepares to enter its twentieth year, I am confident that the body of work completed in 1997, and the initiatives launched during the year, will prove valuable to market participants and encourage productive discourse on many topics. Our upcoming anniversary serves as a useful reminder of the important contributions the Committee makes in promoting a well-functioning foreign exchange market in the United States and abroad.

John J. Finigan, Jr.

LEGAL INITIATIVES OF THE FOREIGN EXCHANGE COMMITTEE

The Foreign Exchange Committee's legal initiatives seek to promote greater understanding of the laws and statutes that govern foreign exchange trading, and to enhance the integrity of the foreign exchange market by encouraging the adoption of sound business practices. In conjunction with the Financial Markets Lawyers Group (FMLG), the Committee pursued the following initiatives in 1997:

- As part of its ongoing efforts to develop standardized documentation for foreign exchange transactions, in February 1997 the Committee endorsed revisions to a series of master agreements, including the International Foreign Exchange Master Agreement (IFEMA), the International Foreign Currency Options Master Agreement (ICOM), and the Foreign Exchange and Options Master Agreement (FEOMA). Work on the revised master agreements was performed by the FMLG in concert with the British Bankers' Association, the Canadian Foreign Exchange Committee, and the Tokyo Foreign Exchange Market Practices Committee. During the balance of the year, the FMLG obtained legal opinions from multiple jurisdictions establishing the enforceability of settlement and close-out netting provisions under local laws; the FMLG intends to solicit opinions for additional jurisdictions in 1998.
- The FMLG, in a joint endeavor with the International Swap and Derivatives Association (ISDA) and the Emerging Markets Traders Association, developed a set of FX and Currency Option Definitions to standardize foreign exchange trading documentation related to nondeliverable forwards. Reflecting the rapid evolution of the foreign exchange market since the original version of the definitions was published in 1992, the scope of the revised definitions was expanded to include transactions involving major market and emerging market currencies, and deliverable and nondeliverable (cash-settled) transactions. The 1998 version also revises the definitions of foreign exchange spot, forward, and options transactions. Given the nature of market practices in the emerging markets, the definitions pay particular attention to confirmations for transactions in emerging market currencies, defining disruption events and disruption fallbacks from which counterparties can establish an agreed method for settlement upon the occurrence of enumerated events. The definitions and supporting documentation can also be used with both IFEMA- and ISDA-style master agreements.
- The prospect of European and Economic and Monetary Union (EMU) has tremendous legal implications for U.S. participants in European financial markets. In anticipation of the euro's introduction on January 1, 1999, the FMLG supported legislative initiatives to ensure the continuity of U.S. contracts involving the currencies of participating EMU countries. By stipulating that the euro will serve as a commercially reasonable substitute for the currencies of participating countries, the legislation addresses potential complications in

contracts involving a participating member's currency and another currency, or two participating members' currencies, among others. The legislation passed in New York state and was signed into law by Governor George Pataki in July 1997. Separately, in an effort to educate U.S. participants on the legal and operational challenges posed by monetary union, the Committee served as a joint sponsor, with ISDA and the New York State Bar Association, of a June forum on the impact of EMU on U.S. financial markets.

- As part of ongoing efforts to help market participants reduce foreign exchange settlement risk, the FMLG, in conjunction with the British Bankers' Association (BBA), began work on a form of cross-product master agreement that nets amounts due at settlement under separate master agreements. The FMLG and the BBA are targeting 1998 as a date for finalization of the cross-product master agreement.
- The FMLG, in conjunction with outside counsel, continued to advance the Committee's views with respect to proposed revisions to the Treasury Amendment of the Commodity Exchange Act (CEA). On two separate occasions, the Committee submitted statements before the United States Congress in strong support of the proposed modifications, particularly the clarification that transactions in or involving foreign currency are covered by the Treasury Amendment and, therefore, excluded from CEA coverage. The proposed revisions would provide important legal certainty regarding the enforceability of foreign exchange transactions involving U.S. market participants.

Apart from these initiatives, one of the most significant developments of the year was the U.S. Supreme Court's decision in the case of William C. Dunn v. The Commodities Futures Trading Commission. The opinion expressed by the Court, confirming the exclusion of over-the-counter foreign exchange transactions from coverage under the CEA by the Treasury Amendment, validated many of the positions advanced by the Committee in its 1996 amicus brief on the subject. The Committee will continue to monitor ongoing legislative initiatives related to the Treasury Amendment in an effort to ensure that proposed modifications provide all types of foreign exchange transactions with the broadest exclusion from CEA coverage.

Committee endorsed master agreements and other publications may be viewed and downloaded from the Foreign Exchange Committee's World Wide Web site at *www.ny.frb.org/fxc/fxc.html*. Copies may also be obtained by contacting the Committee's Executive Assistant at (212) 720-6651.

COMMITTEE RELATIONSHIPS WITH OTHER INDUSTRY BODIES

The rapid global integration of the foreign exchange marketplace, and the corresponding expansion of linkages across financial products, have prompted the Committee to consider its relationships with other organizations that share a similar mission in promoting well-functioning financial markets. The Committee's desire to expand these relationships culminated this year in the joint meeting with the Singapore Foreign Exchange Market Committee in November.[1] The Committee hopes that the success of this meeting will provide a basis for greater communication between Singapore and New York, perhaps leading to a future joint endeavor, as well as serve as an impetus to forge closer links with similar organizations around the world. Meanwhile, the Committee will continue to consider issues, such as the growing interest to consolidate global booking arrangements, that might benefit from more active international collaboration.

Many of the issues considered by the Committee are also of interest to professional organizations representing other markets. As such, the Committee this year embarked on a joint initiative with the International Swaps and Derivatives Association and the Emerging Markets Traders Association to develop a set of FX and Currency Option Definitions that standardize trading documentation for nondeliverable forwards and related emerging market transactions. The Committee anticipates this endeavor, effectively drawing on expertise across disciplines, to serve as a model for addressing future cross-market issues as they develop. The Committee will continue to solicit the expertise of other industry bodies and to share its own resources when a collaborative effort can make an important contribution to enhancing the performance of global financial markets.

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[1] *For a discussion of the Committee's joint meeting with the Singapore Foreign Exchange Market Committee, see the "Chairman's Report," p.1.*

REPORT OF WORKS-IN-PROGRESS

The Committee initiated a series of projects that will continue throughout 1998. The most prominent of these efforts relates to the Committee's ongoing interest in settlement risk issues, as described in the "Chairman's Report." The Committee will also continue its work on a number of other initiatives, including:

- A set of guidelines establishing best practices for confirmation of currency options, drafted by the Operations Managers Working Group. Given the rapid growth in foreign exchange options trading over the past five years, this initiative will establish guidelines to promote standardized processing of options transactions, similar to the straight-through processing that has already become standard practice in conventional spot trading.
- A set of guidelines, drafted by the Operations Managers Working Group, establishing trading practices for dealing with nonfinancial institutions. The guidelines will summarize market conventions related to trade execution, confirmation, and settlement in an effort to encourage corporate customers and other nonfinancial institutions to adopt standard industry practices.
- Consideration of the implications of European Economic and Monetary Union for U.S. market participants, an effort that is being led by the Operations Managers Working Group. The Committee intends to host a seminar on the subject in 1998.
- A cross-product master agreement that nets amounts due at settlement under separate master agreements. As part of the Committee's ongoing efforts to help market participants reduce foreign exchange settlement risk, the Financial Markets Lawyers Group has advanced this issue jointly with the British Bankers' Association.

In addition to these endeavors, the Committee will continue to monitor market and industry developments to identify and pursue prospective issues in the areas of trading practices, market structure, and risk management. Two items that appear particularly worthwhile are the establishment of standard market conventions for electronic trading and the growing interest of dealers in consolidating global booking arrangements and trading in one name.

MEMBERSHIP SUBCOMMITTEE REPORT

The Membership Subcommittee advises the Federal Reserve Bank of New York on potential candidates for Committee membership, makes recommendations regarding Committee assignments, and considers changes to the Committee's organizational structure. Given the rapid evolution of the foreign exchange market, the Subcommittee also evaluates the composition of the Committee to ensure the fair representation of all interests in the market at all times. In recent years, the Committee has added representatives from the electronic broking community and from foreign exchange dealers other than banks and investment banks. As part of the Committee's ongoing efforts to establish more formal links with other market constituencies, in 1997 the Subcommittee discussed whether at some point members of the customer community—such as sophisticated corporations or hedge funds—should be considered for membership. At present the Committee agreed to invite representatives from non-intermediaries to individual meetings when their perspective could make a valuable contribution to the Committee's work.

In January 1997, the Committee approved a revised "Document of Organization" that includes several changes to its organizational structure. As part of this reorganization, the Committee disbanded its standing subcommittees in risk management, market structure, and trading practices, and decided to organize instead around adhoc working groups formed in response to particular issues as they arise. The Committee maintained the Membership Subcommittee as its only standing subcommittee.

ADVISORY ROLE OF THE FOREIGN EXCHANGE COMMITTEE

A principal purpose of the Foreign Exchange Committee is to advise the Federal Reserve Bank of New York on issues related to the foreign exchange market. Committee discussions provide an opportunity for members representing various types of institutions to offer their assessments of recent market developments and trading conditions. Such discussions are particularly useful during periods of increased market stress or heightened volatility, as witnessed this year during the Asian currency crisis. In addition to a review of exchange rate trends, Committee meetings also provide a forum for members to highlight industry developments that warrant Committee attention. Such discussions typically cover a broad range of topics, including trading practices, market structure, operations, and risk management.

One recurrent theme at Committee meetings in 1997 related to potential structural changes in the marketplace. This concern reflected a variety of recent developments:

- *Greater price transparency caused by electronic broking*. In a follow-up to the electronic broking discussions and survey initiated in 1996, members noted that the efficiency of the price discovery mechanism continues to erode spreads available for market-making activities. This ongoing process has broad ramifications for traditional providers of liquidity, prompting firms to place less emphasis on market-making activities and more on value-added services, and encouraging additional consolidation in the industry.
- *Potential innovations in reducing foreign exchange settlement risk*. Committee members considered the potential impact of new settlement risk reduction tools on future trading. The ramifications of contracts for differences (CFDs) for front-office trading conventions received considerable attention given the possible bifurcation of the market into CFD and cash components.[1]

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[1]*See related discussion on CFDs in the Chairman's Report, p.1.*

- *European Economic and Monetary Union (EMU).* In addition to considering the technical and legal challenges EMU poses to U.S. market participants, members also initiated a discussion on how monetary union might affect front-office trading conventions such as the quoting of prices to customers. The Committee intends to pursue this subject in more depth in 1998.

In addition to these potential market structure issues, the Committee also provided advice on the effort to standardize foreign exchange trading documentation related to nondeliverable forwards, the upcoming BIS settlement risk survey by the Group of Ten central banks, and next year's triennial "Foreign Exchange Turnover Survey."

MEETINGS OF THE COMMITTEE

Having adopted an abbreviated meeting schedule in 1997, the Committee met only eight times during the year. Most meetings were held late in the afternoon and were followed by dinner. Members of the Committee frequently hosted the afternoon meetings and dinners at their institutions; occasionally, luncheon meetings were held at the Federal Reserve Bank of New York.

1997 Meetings	1998 Schedule
January 9	January 8
February 6	February 5
March 6	March 5
May 8	May 7
June 5	June 11
September 11	September 10
October 9	October 8
November 6	November 5

1997 FOREIGN EXCHANGE COMMITTEE ASSIGNMENTS

Committee Chairman	*John Finigan*
Operations Managers Working Group Liaisons	*Stephen Bellotti*
	Lewis W. Teel
Risk Managers Working Group Liaisons	*Paul Kimball*
	Andrew Siciliano
Trading Practices Issue Coordinators	*Lloyd Blankfein*
	Jamie Thorsen
Communications Issue Coordinator	*David Puth*
Membership Subcommittee	*Dino Kos (Chairman)*
	Matthew Lifson
	David Puth
	William Rappolt
	Lewis W. Teel

The Committee was restructured in 1997. The use of standing subcommittees was discontinued in favor of the creation of adhoc subcommittees around specific issues. In view of the contributions of the working groups, and in an effort to promote greater communication between the working groups and the Committee, the working group liaison assignments were created. In addition, the Committee felt that there was a need to designate members as issue coordinators for trading practices and communications. For additional details concerning the Committee's restructuring, see the Committee's "Document of Organization" or the "Chairman's Report."

1998 FOREIGN EXCHANGE COMMITTEE ASSIGNMENTS

Committee Chairman	*John Finigan*
Operations Managers Working Group Liaisons	*Stephen Bellotti*
	Lewis W. Teel
Risk Managers Working Group Liaisons	*Paul Kimball*
	Andrew Siciliano
Trading Practices Issue Coordinators	*Lloyd Blankfein*
	Jamie Thorsen
Communications Issue Coordinator	*David Puth*
Membership Subcommittee	*Dino Kos (Chairman)*
	Don Lloyd
	David Puth
	William Rappolt
	Lewis W. Teel

SELECTED DOCUMENTS

- Managing Operational Risk in Collateralized Foreign Exchange
- A Survey Assessing the Impact of Electronic Broking on the Foreign Exchange Market
- Guide to FX and Currency Option Definitions Addenda
- Committee Letter on Handling of Stop-Loss Orders in an Electronic Trading Environment
- Document of Organization

TRANSMITTAL LETTER

REGARDING THE MANAGEMENT OF OPERATIONAL RISK IN COLLATERALIZED FOREIGN EXCHANGE

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September 25, 1997

Dear Foreign Exchange Professional:

As part of our continuing effort to enhance the integrity of the foreign exchange market through the promotion of sound business practices, enclosed please find a copy of the Foreign Exchange Committee's *Managing Operational Risk in Collateralized Foreign Exchange*. This paper highlights the unique operational risks associated with collateralized foreign exchange trading, a rapidly growing business in many institutions. The paper also recommends a set of Best Practices to reduce those risks. We encourage market participants to implement immediately those Best Practices that can be readily adopted, while actively managing the process to implement the others as appropriate for their institutions.

This document focuses on operational risks related to trade capture and confirmation, trade settlement and payment netting, portfolio valuation and margining, and collateral management, and briefly addresses documentation requirements. In addition to the operational risks specifically identified in the paper, management also should remain aware of other risks related to collateralized foreign exchange, such as the legal risk associated with the perfection of security interests in collateral. Furthermore, although collateralization may reduce credit and settlement risks, it does not obviate the need for an affirmative credit decision before the initiation of collateralized foreign exchange trading with a counterparty. The Committee wishes to underscore that failure to control these legal and credit risks can result in loss.

Please do not hesitate to contact me or other members of the Committee with questions or comments regarding the Committee's work. Copies of this paper and the Committee's other publications may be viewed online or downloaded for later viewing from the Federal Reserve Bank of New York's World Wide Web site at *www.ny.frb.org/fxc/fxc.html.*

Sincerely yours,

John J. Finigan, Jr.
Chairman

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MANAGING OPERATIONAL RISK IN COLLATERALIZED FOREIGN EXCHANGE

Collateralized foreign exchange (FX) trading is a type of trading done between counterparties when one or both counterparties pledge collateral with the other to reduce credit and settlement risk. The fact that collateral is required does not eliminate the need for an affirmative credit decision for this special type of collateralized credit line. Collateralized FX trading has opened up the FX market to smaller companies, asset/investment managers, and high-net-worth individuals who are professional investors.

Although collateralization of the FX trading may reduce some credit and settlement risk, it does not mitigate all risks such as legal risk associated with the perfection of security interests in collateral. Consequently, legal counsel should be consulted before a counterparty commences collateralized FX trading. Further, operational risk is actually increased; credit losses can still occur because of incorrect margining or mismanagement of collateral. Failure to address and control any of these risks can also result in losses of business from reputational damage.

This document focuses on unique operational risks associated specifically with collateralized FX trading and recommends Best Practices that many market participants are implementing to reduce the operational risk associated with collateralized FX trading. We urge market participants to review these Best Practices with an eye toward implementing those that can be adopted immediately while actively managing the process to adopt the others as appropriate to their institutions. We recognize that future experience and innovation will lead to new Best Practices over time.

Because this document focuses on operational risks, documentation requirements are not addressed in great detail. In most financial institutions, documentation negotiation and tracking are not operational responsibilities. However, the sales and trading desks, as well as the operations and credit areas, must be fully informed of the terms of applicable legal agreements and must institute procedures to ensure that they are followed.

The key to collateralization of FX trading by a financial institution is the proper margining of a counterparty's trading account to cover adequately that counterparty's foreign exchange exposures to the financial institution. Margining can only be done effectively with accurate tracking and valuation of the collateral, as well as correct valuation of the current FX positions held by the counterparty. Operational technology and procedures should be functioning at a level of detail such that operations staff can properly process the FX deals that are being done and ensure the financial institution that the counterparty is properly collateralized. Automated processes are a key step in controlling the operational risks involved in collateralized FX trading.

The Best Practices are aimed at the collateralization of spot and forward FX trades with nonfinancial institution counterparties. While the recommended practices can for the most part cover collateralized FX options, such FX options are not specifically mentioned. One factor to consider when handling collateralized FX options (also known as leveraged currency options) is portfolio valuation methodology, which is not discussed here. In addition, while we recognize a trend in cross-product collateralization that includes interest rate swaps, asset swaps, foreign government securities, and similar products, we have not addressed these financial products.

A few terms used throughout the document should be clarified.

Collateral:
An asset pledged to a counterparty, who in turn has the right to apply it against any losses that the counterparty may incur if the counterparty pledging the asset defaults.

Collateralization:
In the context of these Best Practices, obtaining a security interest in an asset in order to secure margins that have been established with a counterparty.

Credit enhancement agreement:
The generic term for the documents used to establish a collateralized FX relationship with the counterparty, whether or not as an annex to a netting agreement. Examples include the ISDA Credit Support Annex or a margin trading supplement to IFEMA or FEOMA. (At this time, there is no standard published margin trading supplement to IFEMA or FEOMA.)

Credit risk area:
The department in the financial institution that (i) assesses the probability that a counterparty will be financially unable to fulfill its payment or settlement obligations and (ii) establishes credit lines to limit the financial institution's exposure to such defaults.

Exposure:
The sum effect of the mark-to-market value of a counterparty's open positions and cash-versus-collateral value. Exposure can be reduced by the use of legally enforceable and operationally feasible netting agreements.

Margining:
Margining is the monitoring aspect of handling a collateralized FX account and is used to describe the marking to market of a counterparty's trading account value versus the value of collateral pledged less any haircuts to determine if the counterparty's exposure is adequately collateralized.

Margin Tracking System:
The system used to monitor and process collateralized FX trading activity. The system should have the ability to calculate the value of a counterparty's portfolio and track pledged collateral in order to determine if exposure to a counterparty is sufficiently collateralized. The system should also allow for netting and apply other criteria as defined in the applicable credit enhancement agreement.

Portfolio:
The net exposure in a counterparty's trading account, including all open FX trades and the cash balances and collateral relating to such transactions.

TRADE CAPTURE AND CONFIRMATION

The trade capture and confirmation of collateralized FX trades should be treated in exactly the same manner as noncollateralized FX trades. See the document, "Management of Operational Risks in Foreign Exchange," released in April 1996 by the Foreign Exchange Committee, for further best practices related to timely trade entry and confirmation. The act of margining the collateralized trading accounts is an additional step in the processing of FX transactions. Again, collateralized FX trading is subject to all the operational risks of FX trading as well as the credit and operational risks of managing collateral.

Best Practice No. 1: Timely Trade Entry

All collateralized FX trades should be entered in the margin tracking system as quickly as possible to update the counterparty's portfolio on a real-time basis in cases where a financial institution's credit policy requires real-time margining.

The counterparty's portfolio should have all trades correctly entered in a margin tracking system as soon as possible to ensure the proper margining of the trading account. If trades are left out of a counterparty's portfolio, the portfolio value will be incorrect and may leave the institution undercollateralized and at risk.

If a trade is executed by an asset manager or investment advisor, then the asset manager or investment advisor should provide account breakdowns before the end of the day on which the trade is booked to ensure proper margining. Normally, each account trading through a single investment advisor must be separately margined.

Best Practice No. 2: Electronic Interfaces between Margin and FX Processing Systems

If a margin system is separate from a corresponding FX trade settlement system, trade capture interfaces between the two systems should feed trade information and perform an automatic reconciliation of trade data. In addition, the market value of the collateral in the margin system should be consistent with that of the system that processes the collateral product.

Accurate trade data in the margin system are required to ensure the correct margining of a counterparty's trades at all times. A daily reconciliation between the two systems should be performed. Ideally, this reconciliation will be automatic, not manual. Collateralization is only fully effective in reducing risk if the margining of the accounts is accurate.

Additionally, if collateral valuation is not performed by the system that performs the processing of that type of asset (for example, the securities processing system for Treasury bills), a procedure should be in place to ensure that the rates and the firms valuation methodology for that asset type are consistent. Such a procedure will reduce risk caused by incorrect valuation of the collateral.

Collateralized FX counterparties may require statements of their margin accounts (including portfolio valuation and margin call support) which can be separated from the trade confirmation process.

TRADE SETTLEMENT AND PAYMENT NETTING

Payment netting is the act of aggregating all cash flows with a specific counterparty for a specific date in order to have only one cash flow for each currency.

Best Practice No. 3: Position Close-Out Agreements

Ideally, agreements should be made with collateralized counterparties stipulating that all foreign currency positions be closed out by the value date of the deals.

Closing out currency positions will leave the collateralized counterparty with a cash amount of profit or loss to settle on the value date. Normally this cash amount is in U.S. dollars, but it could be in any currency. At some institutions, these amounts are termed compensations or offsets. The net settlement on any given value date would then consist of only one cash payment to or from the counterparty. (The financial institution will reduce settlement risk by reducing the size of the possible payment failure.)

Some counterparties will prefer currency delivery to automatic close-out; if the execution of close-out agreements is not possible, see Best Practices Nos. 4 and 5 below.

Best Practice No. 4: Settlement Netting Agreements

A netting agreement should be part of the credit enhancement agreement signed by each collateralized counterparty. The netting agreement should specify that all payments in a given currency for a specific value date be netted against each other so that only one payment in that currency is required.

If all positions are not closed out as described in Best Practice No. 3 above, settlement risk can be reduced by netting any residual payments, although netting may be advisable even when there are closed-out trades. The netted payment amounts will reduce the amount of cash flows in settling the transaction. The standard IFEMA (or the recently released FEOMA) and a corresponding credit enhancement agreement can adequately address this requirement. Each institution should designate specific departments—which may include credit, legal, operations, and trading—to review and approve these agreements.

Netting benefits may also be obtained with a broader (cross-product) netting agreement such as the ISDA Credit Support Annex.

Trade settlement, which includes the payment and receipt of the currencies being traded, is normally handled by the FX processing system. If a collateralized counterparty wishes to settle an FX position rather than close it out, the settlement process should be managed more carefully to control the settlement exposure. Additional measures that should be taken when dealing with collateralized FX settlements in order to reduce the settlement risk.

Best Practice No. 5: Contingent Payment Release

Payment release is a credit decision. Until a settlement line is granted, no principal settlement amounts should be released to a collateralized counterparty until full payment of the currency owed by them has been received, or unless the payment is fully collateralized.

Payments on an FX deal may require a credit decision. In order to manage settlement risk, payments may be handled (1) by accepting separate collateral, (2) by granting a settlement line, or (3) on a payment-versus-payment (PVP), or contingent, basis. A PVP payment release occurs only after the financial institution receives confirmation that the funds transfer from its counterparty is irrevocable. If the collateral processing and FX processing systems are separate, clear procedures should be established to ensure that FX payments are not made until the collateral processing system confirms that there is adequate collateral to cover the counterparty's outstandings.

A financial institution should consider and resolve questions about payment releases to a counterparty before trades are entered into with such a counterparty.

PORTFOLIO VALUATION AND MARGINING

Portfolio valuation involves calculating the value of the trading account that is being collateralized. Included in this portfolio are the open trades held by the counterparty, the cash flows of positions that have been closed out but have not yet reached the value date, and the collateral itself. In order to net these amounts, the parties must enter into a legally enforceable netting agreement along with a credit enhancement agreement (see Best Practice No. 4 above). The current portfolio value is used to determine whether the counterparty is sufficiently collateralized. Therefore, the information used to value the portfolio must be accurate, up-to-date, and verified independently.

The system used to monitor and process collateralized FX trading activity should have the ability to determine the value of a counterparty's portfolio and thus to determine whether a counterparty's trading account is sufficiently collateralized. Institutions differ in their methods of assessing the value of a counterparty's portfolio. One method is to calculate the maximum downside risk (MDR) of a counterparty portfolio. The MDR is the most that a counterparty could lose based on (l) open positions and (2) the maximum market movement. The MDR is the worst case scenario of what could happen in a pre-defined period if a counterparty held the same positions. Another method is to calculate the current value of the counterparty's open positions and compare this profit or loss to the collateral on hand.

Whatever risk calculation methodology is employed, the financial institution's FX collateral system should be able to determine if the counterparty's collateral is valuable enough to cover any shortfalls. If the collateral is insufficient under the terms of the applicable credit enhancement agreement, based on the standards set for margining (which vary from counterparty to counterparty and institution to institution), then the system should notify sales, trading and operations immediately that a counterparty is undercollateralized.

Best Practice No. 6: Real-Time Rate Update

Rates used to revalue the open FX positions should be updated on a real-time basis to ensure that the current portfolio value properly reflects changes in the market value.

The system used to perform the margining of the counterparty accounts should have a real-time rate feed from a reliable, independent rate source. The portfolio will then be revalued as often as the rates are updated on the rate source. The system should have the means to warn users if off-market rates are received. Such a mechanism may be created by establishing rate exception parameters. A system incorporating this mechanism will recognize if new rates vary significantly from the last rates input.

Best Practice No. 7: Cash Flow Update

Cash flows, which represent funds to be paid or received by the counterparty at a future date, should be removed from the counterparty portfolio only after it has been confirmed that the funds have actually been paid or received through an irrevocable transfer.

When FX positions have been closed out (that is, the same amount of foreign currency has been purchased and sold in the counterparty account), the profit and loss resulting from the purchase and sale must be settled. When the counterparty has profited on the trades, the cash flow is a receivable to the counterparty until the value date when the funds are actually received by the counterparty. In this case, the cash flow is an asset, increasing the value of the portfolio and potentially decreasing the collateral requirements. Once the funds have been sent to the counterparty, the cash flow is "settled," or removed from the portfolio since the payment obligation has been fulfilled by the financial institution. Alternatively, when the counterparty has suffered losses on trades, the cash flows are liabilities to the counterparty, which lower the portfolio value by the amount owed, potentially increasing the collateral requirements. Once the funds have been received by the financial institution, then the counterparty obligation is eliminated and the liabilities are removed from the portfolio.

These cash flows should be "settled" or removed from the portfolio only after confirmation that the funds have been paid or received so that counterparty portfolio and trading account information is never overstated. This is an important part of reducing the risk of incorrect margining. Furthermore, no payments to a counterparty should be made that will leave an institution's collateral account in a deficit the next day. Cash movements should be considered relative to settlements the next day (T+1) and the impact on the collateral requirements. Ideally, an electronic link between the settlement and the collateral systems will reconcile the cash flows to the pay or receive messages. Once the cash flows and payments have been reconciled and the next day's (T+1) collateral position assessed, the cash flows should be removed from the counterparty's account.

Best Practice No. 8: Real-Time Monitoring of Counterparty Positions and Margin

Because of the volatile and global nature of the FX markets and the uncertain creditworthiness of counterparties, counterparty positions and profit or loss against the available collateral should be monitored on a real-time basis, twenty-four hours a day.

Supporting collateralized FX trading may be a global task. Positions can be monitored at one site for the full twenty-four hours span or from multiple sites around the world, with each site assuming responsibility for some portion of the twenty-four hours.

Reaction to international events or economic data may result in uncertain market conditions and extreme movements in currency and/or collateral values. Periods of high volatility and extreme market moves may also increase counterparty credit exposures. Procedures should provide for crisis management during these periods to ensure active monitoring of margin requirements and calls as well as added management oversight and escalation.

Best Practice No. 9: Strict Adherence to Margin Calls

The operations area should notify the sales and trading desk and the counterparty immediately if a counterparty requires a

margin call. The counterparty should be asked to respond—that is, to pledge additional collateral or to close out open positions—within a minimal period of time.

The procedures for handling margin calls vary from institution to institution. It is critical that these procedures be clearly documented and available to all personnel supporting the collateralized FX accounts. Additionally, margin call requirements and procedures (specifically, margin call deadlines and threshold amounts) should be clearly set forth in the underlying credit enhancement agreement. Cutoffs for meeting margin calls should be established (including time elapsed before close-out) and closely monitored.

Failed margin calls should be reported immediately to the credit risk manager and sales or trading manager for approval or decision on the next course of action, which could include closing out positions. It is important that additional approvals or notification be required when a margin call is overridden. The credit enhancement agreement should address how long trading activity may continue after a margin call is not met. Because disputes in margin calls may arise, procedures for handling these disputes should be clearly established in this agreement before counterparty activity begins.

COLLATERAL MANAGEMENT

One key to successful collateralization is the proper management of collateral, including its valuation and the creation of a perfected security interest. The process of collateral management typically involves several different support areas, their exact identity depending on the types of collateral accepted. Timely communication of information between the various areas is essential to manage the exposure from counterparties' positions.

Best Practice No. 10: Approved Collateral List

The institution should maintain a list of types of collateral that are approved for collateralized FX trading in general and should tailor the list as necessary to each counterparty. The list should be initiated and approved by the credit risk area with input from sales and trading management.

Best Practice No. 11: Establishment of Haircuts on Collateral

Certain types of collateral should be valued at a percentage of the market value in order to reduce market risk. Collateral should be valued at least daily.

Noncash collateral should be given a haircut (that is, valued at lower-than-market value) because of market risk associated with that collateral's value. Cash collateral not in the financial institution's base currency should also be given a haircut because of exchange risk. The magnitude of the haircut depends on the relative risk of the collateral instrument, which reflects creditworthiness, volatility, and tenor, as well as liquidity. The haircut amounts should be approved by the credit risk area with input from sales and trading management.

Collateral such as securities and foreign currency should be valued at least daily using rates obtained from independent sources. Valuing collateral on an intraday basis may be appropriate in situations of high market volatility.

Best Practice No. 12: Proper Possession and Control of Collateral

Collateral should be legally pledged by the counterparty so that the pledgor cannot use that collateral without authorization from the pledgee. Collateral should not be added to the counterparty portfolio until confirmation has been received that the collateral is secured and that the transfer is irrevocable.

If the collateral is not properly secured, the counterparty, anticipating losses, could withdraw the collateral before paying for any losses. Collateral should be legally pledged to and/or by the counterparty in a manner that perfects a security interest in the collateral, thus restricting withdrawal of collateral unless agreed to and released by the pledgee. The method of perfection may vary by collateral type and by jurisdiction.

The collateral account name should be such that the pledgee's legal rights to the collateral are protected to the utmost. In-house or external legal counsel can provide guidance on how to achieve the best security perfection. Collateral should only be included in the counterparty portfolio when its receipt has been confirmed and is supported by a legally enforceable pledge agreement. This also applies to substitution of collateral.

An electronic link between the custody area that receives collateral and marks it as pledged and the collateral system is highly desirable. If the collateral is not held directly by the pledgee or one of its affiliates, a third-party professional custodian/depository with an experienced staff and established systems and procedures should be given legal responsibility for securing the collateral. Daily collateral statements from this custodian (whether the custodian is a third party or affiliated with the financial institution) should be obtained in order to reconcile collateral positions.

Best Practice No. 13: Return of Collateral

Two steps should be taken when a counterparty requests the return of collateral: (1) the account should be evaluated to ensure that the counterparty will continue to be sufficiently collateralized once the requested amount of collateral is removed from the portfolio, and (2) as soon as the instructions to send back the collateral have been given and accepted, the collateral should be removed from the counterparty's account.

Before honoring any request for the return of collateral, a financial institution should evaluate the counterparty's trading account to ensure that the counterparty will be sufficiently collateralized after the requested collateral is returned. This evaluation should include ensuring that all recent trade activity has been input and that rates used to revalue the positions are current. A transfer threshold should be agreed upon with the counterparty to avoid excessive and costly collateral transfers. The counterparty's account should be immediately reduced by the amount of collateral returned. A financial institution should be able to perform these functions quickly and efficiently so that if a counterparty has a right to have its collateral returned (if, for example, its positions move into the money), the collateral is returned promptly in accordance with the terms of the applicable credit enhancement agreement.

Best Practice No. 14: Reconciliation of Collateral

Collateral should be reconciled daily between the collateralized FX system and the systems used by the areas actually holding and processing the collateral.

It is important that the pledgee's FX collateral system and the systems used by the collateral custodian be reconciled. Ideally, electronic interfaces between these systems will update the collateral amounts as soon as they are updated by the custody areas. A daily electronic reconciliation is highly desirable because of its speed and accuracy.

The pledgee should clearly define the time limits for all required communications with its collateral custodian. The pledgee must notify the custodian of incoming or outgoing collateral, and the custodian must inform the pledgee of receipts and fails within agreed-upon timeframes to reduce any additional risk. The applicable custodian agreement as well as the pledgee's procedures must indicate the required time frames for notifications of and delivery of collateral. These time frames should also cover additional margin calls.

DOCUMENTATION

Best Practice No. 15: Maintenance of Complete Counterparty Files

Netting, credit enhancement, and custodian agreements should be signed and kept on file in the documentation area. Collateralized trading should not begin until sufficient documentation has been received, unless the credit risk area has approved uncollateralized exposure.

Operations and sales and trading personnel should ensure that all documentation for a new collateralized counterparty has been received and is on file before trading commences. Documentation on file should also include internal credit approvals, counterparty account setup forms, custody agreements, and pledge agreements. In-house or external legal counsel can provide guidance as to the most appropriate forms of documentation and the rights of any counterparty pledging collateral, which may or may not emanate directly from such documentation.

Sales, trading, and operations should have a thorough understanding of the terms and conditions of these documents and their own roles in the process of collateralized FX trading. In particular, these areas should understand the risks involved in this business and the procedures used to reduce these risks.

CONCLUSION

These Best Practices have been found to be of value in reducing the operational risks of collateralized FX trading. Because of the variety of operational areas and systems typically involved in this type of trading, communication is a key factor in reducing risk. Whether the communication is verbal or electronic, there should be an effective exchange of information between the sales and trading desk, operations, the counterparty, and custodian(s) of counterparties when engaging in collateralized FX trading. Constant and real-time communication is the only way to provide all parties with accurate and timely information, and to reduce financial risk. Additionally, clearly defined responsibilities and procedures are critical to effectively controlling collateralized FX trading.

ACKNOWLEDGMENTS

Foreign Exchange Operations Managers Working Group

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TRANSMITTAL LETTER

REGARDING THE IMPACT OF ELECTRONIC BROKING ON THE FOREIGN EXCHANGE MARKET

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December 4, 1997

Dear Foreign Exchange Professional:

As part of our continuing effort to monitor developments affecting market structure, enclosed you will find a copy of the Foreign Exchange Committee's *Survey Assessing the Impact of Electronic Broking on the Foreign Exchange Market*. The Committee envisions this paper as the first in a series of publications that will address the ongoing effects of technology on the marketplace.

This survey evaluates the impact of electronic broking on market structure, particularly the effect on interbank spreads, market liquidity, price transparency, and interbank cost structure. It also considers the implications of electronic broking as a source of competition for voice brokers, the impact on potential industry consolidation, and the affect on risk management practices. The survey also highlights an ongoing need to establish standard market practices and ethics related to electronic trading; the Committee intends to address this subject as part of its next revision to *Guidelines for Foreign Exchange Trading Activities*, last published in January 1996.

Please do not hesitate to contact me or other members of the Committee with questions or comments regarding the Committee's work. Copies of this paper and the Committee's other publications may be viewed online or downloaded for later viewing from the Federal Reserve Bank of New York's World Wide Web site at *www.ny.frb.org/fxc/fxc.html*.

Sincerely yours,

John J. Finigan, Jr.
Chairman

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A SURVEY ASSESSING THE IMPACT OF ELECTRONIC BROKING ON THE FOREIGN EXCHANGE MARKET

One of the most significant developments to affect the foreign exchange market in recent years has been the growth of electronic broking. Since its introduction in 1992, electronic broking has helped accelerate the pace of change in the industry, and its increasing market penetration has important ramifications for the future structure of the market. This paper reviews and assesses the recent impact of electronic broking on foreign exchange trading. The Foreign Exchange Committee envisions it as the first in a series of publications that will address the ongoing effects of technology on the marketplace. While the paper discusses specific technologies and/or products, such discussion indicates no endorsement of any particular technology or product. Likewise, although the paper makes observations about recent market developments brought about by electronic broking, it expresses no view on the desirability of those developments.

In order to gather empirical data on electronic broking, Committee members completed a survey on their use of these systems. The survey was augmented by conversations with a small group of chief dealers. Based on the survey and the ensuing conversations, this paper evaluates the impact of electronic broking on market structure, particularly the effect on interbank spreads, market liquidity, price transparency, and interbank cost structures. It also considers the implications of electronic broking as a source of competition for the voice brokers, as well as its impact on potential industry consolidation. Finally, the study addresses electronic broking's potential implications for risk-management practices.

OVERVIEW OF SURVEY RESULTS

The survey addressed the use and reliability of electronic broking systems, the effects of electronic trading on market structure, and future prospects. It was completed by the members of the Committee: representatives of money center banks, foreign banks, regional banks, and investment banks. A list of participating institutions can be found in Appendix A; the survey results can be found in Appendix B.

All of the survey respondents subscribe to Reuters Dealing 2002-2 and/or EBS. The number of electronic terminals they used varied widely, but averaged thirty stations per institution at the time of the survey (many firms indicated that over the following eighteen months they planned to install additional terminals). The volume of transactions conducted via electronic systems averaged 40 percent of total brokered transactions, although in terms of total notional value the volume averaged only 33 percent. This disparity suggests that respondents are using electronic systems to execute lower value deals with relatively higher frequency. Not surprisingly, the most actively traded currency pairs (dollar-mark and dollar-yen) also represented the greatest share of electronically broked transactions.

The respondents rated the overall reliability of electronic systems as "good" or "satisfactory," although the majority had experienced some technical or operational problems. The two most frequently encountered problems were down time and response time. Discussions with the chief dealers suggested that the frequency of these problems is very low, but the magnitude of the problems when they do occur is very large. A majority of respondents stated that they had never experienced a counterparty dispute over a deal struck on an electronic system. The minority that had experienced a dispute said that the resolution with the counterparty was “satisfactory” or “very good.”

Although the majority of respondents expressed concerns about security issues, particularly with respect to unauthorized access and unauthorized trading, the chief dealers suggested that these risks could be minimized if traders made better use of the security features already available within the systems. The survey also identified the integration of electronic trading systems with other proprietary dealing and operations systems as a potential problem area. Fewer than half of the respondents presently operate in an integrated environment, although several indicated that they are still integrating their systems; others suggested that the integration expense was too high to justify.

One of the more immediate issues related to systems integration involves the allocation of credit lines among multiple electronic brokers. Several respondents raised this as a potentially serious problem if the sharing of information between systems does not occur. For example, with many respondents subscribing to both major electronic services, current practice dictates that separate credit facilities be provided for each service. The chief dealers suggested that this duplication conceivably could result in the expansion of overall credit facilities beyond prudent limits.

All but one respondent felt that electronic broking would expand to other products. The majority felt that the forward and forward rate agreement markets were the most likely candidates for trading via an electronic medium. Money market instruments were the most common write-in prediction for future electronically traded instruments, although other respondents also highlighted options and exotic currencies. Several respondents suggested that central banks were the most likely candidates to join the current community of electronic broking users.

The survey also highlighted an ongoing need to establish standard market practices and ethics related to electronic trading. The Committee intends to address this subject in a follow-up paper.

EFFECTS OF ELECTRONIC BROKING ON MARKET STRUCTURE

Three recurring themes regarding market structure were observed in both the survey responses and follow-up interviews. They relate to increased market accessibility, the effect on interbank market making, and enhanced cost efficiency. Access to electronic broking systems enables smaller institutions to deal at the same favorable spreads as larger firms. This increased participation may, at the margin, be eroding incentives to engage in traditional market-making activities since second- and third-tier participants no longer need to quote interbank prices to access liquidity directly from the larger institutions. Meanwhile, the downward pressure on traditional market-making profitability and the perceived efficiency of electronic broking as a cost-reducing vehicle have important ramifications for industry consolidation.

Changes in the price discovery process have typically followed the introduction of technologies. The early improvements in telephone communications reduced bid-offer spreads and led to the rapid growth in brokered transactions worldwide. Likewise, the introduction of conversational trading systems (for example, Reuters 2000-1) and the broader use of options pricing models increased market efficiency and, inadvertently, were factors in attracting new participants to the market. However, those same factors narrowed spreads for market makers and reduced profit opportunities for those dealers that did not adapt their product mix and cost structure to the changed environment. Electronic broking may be the latest technological advance to affect market structure. The remainder of this section elaborates on electronic broking’s consequences on market structure and convention based on the survey results and follow-up discussions with the chief dealers.

Liquidity and the Narrowing of Spreads

Respondents were asked if the advent of electronic broking has had a material impact on market liquidity. The survey results suggest that market-making firms have generally experienced moderate to significant improvements in liquidity, but that non-market-making firms have experienced the most significant improvements. The chief dealers attributed this development primarily to the increase in price transparency, which effectively places the smaller firms on a par with the larger institutions, encouraging broader participation in the market. Moreover, the survey results strongly suggest that electronic broking has reduced the spreads available for market making activities. The chief dealers noted that a continued erosion in bid-offer spreads would prompt firms to place less emphasis on their market making activities. They also stressed that former providers of liquidity, to remain profitable, must adapt by emphasizing value-added services such as timely advice, structured products, cross-market insights, and other tailored services.

Performance in Volatile Markets

If the number of institutions willing to make two-way markets declined, concerns may mount about liquidity in an electronic environment during periods of market volatility. To address this issue, the survey contained three questions about system performance under varying degrees of stress (high, medium, and low). While the satisfaction level decreased as the volatility increased, under all scenarios the majority of respondents felt that the performance of electronic broking systems was at least satisfactory during volatile market conditions.

Nevertheless, the chief dealers suggested that electronic broking could have a detrimental effect on market liquidity under particularly volatile conditions if, in an electronic environment, a smaller number of banks was willing to make two-way markets. As such, they suggested that maintaining a viable interbank direct dealing market was prudent to ensure sufficient liquidity to handle large trades during periods of stress.

Subsequent to the survey, isolated incidents have further highlighted the importance of market performance under volatile market conditions. For instance, in swiftly moving markets, when prices gap quickly, electronic broking systems may show an "old" reference price ("big figure") at which other participants may inadvertently deal. This situation occurs when traders become accustomed to inputting only the last two digits of a bid or offer and rely upon electronic systems to identify the reference price based on the last sale price. However, under volatile conditions, when the market gaps quickly between reference rates, electronic systems may not recognize that the big figure has changed. As such, when traders fail to input the entire price of a bid or offer, electronic systems may post an "off-market" price. Such examples have served to underscore the newer risks to which market participants must adapt, particularly during volatile market conditions. An important element of this process is the need for proper training at the user level. In addition, firms subscribing to electronic broking services must know their obligations and liabilities—and those of the electronic brokers—when the system posts a price that proves to be off-market.

Cost Structure

In assessing the benefits of electronic broking on the foreign exchange market's business cost structure, the survey respondents identified three primary advantages: lower brokerage expenses, improved market data, and automation of trade processing. The chief dealers emphasized that direct feeds into foreign exchange trading blotters and through the back office have reduced error rates and have increased efficiency. As firms exploit the operational efficiencies of an electronic environment, the average cost per trade, including the price of the electronic system, reportedly continues to decline. Meanwhile, the downward pressure on market-making activity, according to the chief dealers, has forced institutions to focus on the cost side of the revenue equation in an effort to maintain profitability.

The introduction of electronic broking has also led to a broad reassessment of how active market makers access liquidity, and the associated costs of that liquidity. Most survey respondents identified the desire to reduce brokerage costs as the most compelling feature explaining the rapid growth of electronic trading. Discussions with the chief dealers confirmed the perceived cost benefits of electronic broking, but one counter argument raised by the group was that electronic broking may give customers the appearance of efficiency, but in the final analysis may prove more costly. Although the cost per electronic transaction may decline, overall costs may increase if electronic systems result in lower value deals with relatively higher frequency than conventional voice brokered transactions.

Nevertheless, respondents observed that electronic trading has served as a catalyst for consolidation of spot foreign exchange voice brokerage services, with some firms merging or reducing brokerage fees to remain competitive. Most survey respondents suggested that the target market for voice brokerage services would migrate toward the less liquid and/or exotic currencies, which currently have lower levels of transparency. A major issue, according to the chief dealers, remains whether the market share of both the voice brokerage and direct market-making businesses will continue to contract equally, or whether one will experience steeper declines in usage and liquidity. Several chief dealers suggested that the voice brokers may need to develop their own electronic confirmation and matching processes to remain competitive. Subsequent to the survey, a group of voice brokerage firms announced that they will shortly establish a joint company to develop a direct deal notification service (DDN). The service will aim to provide more timely delivery of deal information from voice brokers to customers.

Internal Corporate Consolidation

The chief dealers added that the effects of electronic brokerage have extended beyond the voice brokers to transform the economic structure of all trading rooms. As the contribution of market making activities has diminished, full service banks have responded by downsizing staff or consolidating operations in major trading centers. Indeed, the chief dealers highlighted notable instances in which institutions have centralized their trading in a single center and maintained regional sales staffs to service clients. Increases in hardware costs, the dealers asserted, may make it prohibitively expensive for full service banks to operate multiple trading rooms in the future, and may provide management with another rationale for centralizing trading activities.

Risk Management

The chief dealers indicated that electronic broking is likely to affect risk-management conventions as some institutions attempt to offset the loss of "spread" profitability by taking larger proprietary positions. Increased proprietary trading itself requires more attention to risk management. In addition, under volatile circumstances, an electronic marketplace may be less liquid than a voice marketplace. This potentially reduced liquidity requires firms to reevaluate their underlying assumptions and risk-reduction techniques, regardless of whether their electronic trading is proprietary or for customers.

In addition, the chief dealers emphasized that system controls will become of paramount importance as the number of currencies traded primarily on electronic systems increases. The magnitude of potential disruption arising from system failure hardware or human error could be enormous, particularly if the market no longer has the capacity to shift to alternative trading media. Improving system controls may become an industry wide issue that requires extensive interaction with the providers of electronic broking services. Additionally, contingency plans and disaster-recovery procedures must also be assessed and adapted before an electronic market would be considered as a reliable sole, or primary, provider of liquidity. If procedures and policies are established that cross international borders, the potential for chaotic situations can be minimized. Finally, options for banks and electronic brokers to settle disputed trades and compensate for trade differences must be fully understood by all parties.

CONCLUSION

Electronic broking has become a catalyst for change in the foreign exchange market. The rapid proliferation of electronic trading has affected virtually every major area of the market, from liquidity and risk management to industry consolidation. Moreover, electronic broking promises to result in equally dramatic transformations in the future as its use becomes more prevalent and it expands into new product areas. Achieving success in this rapidly changing environment will require effective allocation of resources and the ability to adapt current strategies to meet new demands. The Committee is publishing this paper on electronic broking in the belief that the paper's discussion will help foster a better understanding of these issues in the foreign exchange market.

Appendix A (Participating Institutions)

The institutions listed were participants in the survey assessing the impact of electronic broking on the foreign exchange market.

AIG Trading Group
Bank of America
The Bank of Boston
Bank of Montreal
The Bank of New York
Bank of Tokyo-Mitsubishi
Bankers Trust
Chase Manhattan Bank
CIBC—Wood Gundy
Citibank
Deutsche Bank
First Bank
First Chicago
Goldman, Sachs & Co.
Manufacturers & Traders Bank
Merrill Lynch & Co., Inc.
Midland Bank
JP Morgan
Morgan Stanley & Co., Inc.
NationsBanc—CRT
Republic National Bank
Royal Bank of Canada
Swiss Bank Corporation

Appendix B (Survey Questions and Responses[1])

Federal Reserve Bank of New York
The Foreign Exchange Committee
Electronic Broking System Questionnaire

Availability

1. Which electronic broking systems are currently in use for FX spot transactions in your organization?
   Reuters Dealing 2002-2: 19
   EBS: 18
   Other, please specify: 0.

[1]Responses to questions soliciting comments have been incorporated in the main body of the text.

2. Are these systems being used in all your locations where trading activities are transacted?

Yes: 13

No: 7

Please list the locations that are currently using the electronic broking systems, the number of terminals, and the volume of transactions (in number of transactions and notional value as a percentage of total brokered foreign exchange trading activity for the three months ended March 31, 1996).

Summary Statistics:

Number of Terminals

Mean: Reuters 35.0 EBS 24.0

Percent of Brokered Transactions

Mean: Reuters 18.3 EBS 22.1

Percent of Brokered Notional Value

Mean: Reuters 13.9 EBS 19.3

3. Which systems are used primarily for specific currency pairs?

Currency Pair	Reuters	EBS	Other
USD/DEM	12	17	0
USD/JPY	12	15	0
USD/CHF	8	13	0
GBP/USD	9	8	0
DEM/FRF	5	17	0
DEM/CHF	4	14	0
DEM/ITL	11	7	0
GBP/DEM	3	6	0

Reliability

4. How do you rate the overall reliability of your electronic broking systems?

16 Good
5 Satisfactory
0 Marginally satisfactory
0 Unsatisfactory
0 Not acceptable

Comments: ____________________

5. Have you experienced any technical or operational problems with the systems?

Yes: 13

No: 7

If yes, what are the problems with the systems? Please specify by type. (*Please rate the problems using a scale of 1 to 5, with 5 being the most frequent/serious problem.*)

1.3 Capturing the trade information
2.2 System response time
2.5 System down time
1.0 Confirmation
1.9 Disputed trades (uniformity of market convention)
2.8 User error (counterparty or otherwise)
0 Other, please specify

6. Have you experienced any disputes with your counterparties on trades because of electronic broking system failure or inadequacy?

Yes: 9

No: 11

If yes, how would you characterize the resolution process? (Please choose one.)

4 Very good
4 Satisfactory
0 Marginally satisfactory
1 Unsatisfactory
0 Not acceptable

Comments on potential improvements:

____

7. How was the performance of the systems during the following assumed levels of market volatility?

	Low Market Volatility	Average Market Volatility	High Market Volatility
Good	18	16	0
Satisfactory	2	3	11
Marginally satisfactory	0	1	5
Unsatisfactory	0	0	4
Not acceptable	0	0	0

8. Do you have any security concerns using these systems? If yes, what are your concerns?

	Reuters	EBS	Others
Yes or No	12Y/7N	8Y/8N	N/A

(*Please rate your concerns using a scale of 0 to 5, with 5 being the greatest concern*)

Unauthorized access	3.2	3	__
Unauthorized trades/changes	2.9	3.1	__
Trading Objectives	1.2	1.3	__

Others, please specify:

Adaptability

9. Are these systems easy to use?

	Reuters	EBS	Others
Yes or No	17Y/1N	17Y	1N

Comments:

10. Are there adequate error prevention controls built in the systems?

Yes: 17 **No**: 2

Comments:

11. Are trade information and messages standardized among systems?

Yes: 12 **No**: 6

Comments:

12. Do your electronic broking systems interface with your dealing and operating systems? If not, why not?

Yes: 9 **No**: 11

Reasons for not interfacing:

13. Who are the primary users of the electronic broking systems in your organization?

(*Please rank the frequency of usage using a scale of 0 to 5, with 5 being the most frequent user.*)

3.1	Junior trader
4.6	Senior trader
2.8	Chief trader
0.5	Trading administration
0.6	Operations
0	Others, please specify:

14. In your opinion, what topics should be included in the development of best practices in the utilization of electronic broking systems"?

(*Please rank the importance of each topic using a scale of 0 to 5, with 5 being the most important.*)

4.1	Ethics rules
3.9	Deal/trade capture
3.5	Confirmation
3.1	Reconciliation
3.1	Accounting/financial control
3.1	Audit
0	Others, please specify

Effect on the Market

15. In your opinion, what are the effects on the following areas in the event of increasing usage of the electronic broking systems in the foreign exchange market?

A. Market Convention
(Trading Desk and Operations)

	Trading Desk	Operations
Significant change	14	7
Moderate change	6	9
Little or no change	0	3

Comments on type of changes that electronic broking systems may bring to the foreign exchange market:

B. Efficiency and Liquidity

	Market Maker	Non-Market Maker
Significant improvement in efficiency and liquidity	8	18
Moderate improvement in efficiency and liquidity	10	1
Little or no improvement in efficiency and liquidity	2	0

Comments:

C. Spread/Margin for Market Makers

3 Significant improvement in spread/margin

4 Moderate improvement in spread/margin

0 Little or no change in spread/margin

1 Moderate reduction in spread/margin

12 Significant reduction in spread/margin

Comments: ______________________________

D. Central Bank Foreign Currency Activities

2 Significant impact

4 Moderate impact

12 Little or no impact

Comments: ______________________________

E. Existing Brokerage Structure

16 Significant impact

4 Moderate impact

0 Little or no impact

Comments: ______________________________

Cost

16. Do you think the initial cost of implementing an electronic broking system will prohibit smaller organizations from entering the market as users?

Yes: 6 **No:** 13

Comments: ______________________________

17. Please assess the appeal of electronic broking systems to market participants.

(*Please rate the appeals of electronic broking systems using a scale of 1 to 5, with 5 being the most appealing to you.*)

3.7 Lower brokerage expenses

3.5 Improve the awareness of market conditions

3.4 Automation of trade processing

2.4 Reconciliation

0 Others, please specify:

18. In your opinion, what are the effects on market makers' future salary and benefit expenses, assuming an increasing usage of electronic broking systems?

1	Significantly higher
1	Moderately higher
10	Little or no change
7	Moderately lower
0	Significantly lower

Comments: ______________________________

Future Expansion

19. Currently, the electronic broking systems are primarily used for FX spot transactions. Do you see any future product extension potential of electronic broking activities?

Yes: 18 **No:** 1

Products:

17	Forwards
14	FRAs
13	Others, please specify:

20. Who are the future potential users of electronic broking systems?

7	Corporates
9	Fund managers
13	Central banks
1	Home PC users
3	Others, please specify:

Advantages and Disadvantages

21. In addition to the above, please discuss any other advantages and/or disadvantages of using electronic broking systems:

22. Please list other general comments:

ACKNOWLEDGMENTS

This report of the Foreign Exchange Committee was prepared under the auspices of the following Committee members.

William Rappolt (Chairman)	*Manufacturers & Traders Bank*
Lloyd Blankfein	*Goldman, Sachs & Co.*
Klaus Said	*JP Morgan*
Jamie Thorsen	*Bank of Montreal*

This document was completed in consultation with a task force of chief dealers representing various institutions on the Foreign Exchange Committee.

John Caccavale	*JP Morgan*
Keith Cheveralls	*The Bank of Boston*
Scott Gallopo	*Chase Manhattan Bank*
Michael Guarino	*SBC Warburg*
Gerald Hees	*SBC Warburg*
James Kemp	*Citibank*
Patrick Mauberque	*JP Morgan*
Salvatore Provenzano	*M.W. Marshall*
Jens-Peter Stein	*Morgan Stanley & Co., Inc.*
Glenn Stevens	*Merrill Lynch & Co., Inc.*
Steven Stone	*Citibank*

GUIDE TO THE 1998 FX AND CURRENCY OPTION DEFINITIONS ADDENDA

Representatives of three industry groups, the International Swaps and Derivatives Association, Inc. ("ISDA"), the Emerging Markets Traders Association ("EMTA"), and the Foreign Exchange Committee (the "FXC"), have cooperated to complete the 1998 FX and Currency Option Definitions (the "Definitions"). As originally conceived, the Definitions were to deal solely with non-deliverable forward transactions in foreign exchange and the issues that arise in connection with them, such as the effect of events beyond a party's control on its ability to settle a transaction. It became apparent at an early point, however, that the same issues would also be involved in deliverable foreign exchange transactions, especially those involving an emerging market currency. Thus the Definitions also have provisions applying to deliverable foreign exchange transactions, as well as to deliverable and non-deliverable currency option transactions.

Given the broad scope of the Definitions and the overlap with concepts such as illegality and force majeure, a working group of the Financial Markets Lawyers Group, acting on behalf of the FXC, together with representatives of the British Bankers' Association (the "BBA"), the Canadian Foreign Exchange Committee and the Tokyo Foreign Exchange Market Practices Committee, began to work on supplements ("Addenda") that could be included in or added to the FEOMA, the IFEMA and the ICOM Master Agreement (each a "Master Agreement"), and that would coordinate the provisions of those documents with the Definitions. The Addenda published herewith are the result of that process, and the purpose of this Guide is to explain the provisions of the Addenda. An explanation of the Definitions themselves appears in the practice notes for the Definitions. Capitalized terms used hereafter shall have the meaning given to them in the Definitions unless otherwise defined.

Note: Copies of the full 1998 FX and Currency Option Definitions may be obtained by contacting the Committee's Executive Assistant at 212/720-6651.

As published, the Definitions contemplate that parties may make the terms of the Definitions applicable to a Transaction through a Confirmation. This is an acceptable method with respect to Currency Option Transactions under the FEOMA or the ICOM Master Agreement, which recognize the primacy of the Confirmation for a Currency Option Transaction over the Master Agreement in the event of inconsistency between the Confirmation and the Master Agreement. In contrast, the U.S. versions of the FEOMA and the IFEMA provide for the primacy of the Master Agreement over the Confirmation for an FX Transaction in the event of inconsistency between the two. (See, e.g., Section 2.4 of the U.S. versions of the FEOMA and the IFEMA; in contrast the version published by the BBA adopts the same rule for FX Transactions as for Currency Option Transactions.) Therefore, adopting a supplement to the parties' Master Agreement such as one of the Addenda would be necessary to ensure that the Definitions are effectively applied to an FX Transaction with a Confirmation including terms of the Definitions that amend the Master Agreement. In addition, it may be desirable, even in the case of Currency Option Transactions or where the BBA version of the FEOMA or the IFEMA is being used, to adopt a supplement to the parties' Master Agreement such as one of the Addenda so that the confirmation process will not be as onerous, particularly for Deliverable FX Transactions in major currencies.

Each Addendum is designed so that it can be executed as a separate supplement to the appropriate Master Agreement if the Master Agreement has already been executed. If a Master Agreement has not yet been executed, the Addendum may be integrated into the Schedule as an additional Part of the Schedule. Due to the differences in the organization of the Schedules of the different versions of the FEOMA, the IFEMA and the ICOM Master Agreement, the number of the Part that is being added to the Schedule has been left blank and should be filled in prior to execution.

There are three different Addenda—one for the FEOMA, one for the IFEMA and one for the ICOM Master Agreement. Note that in the case of the IFEMA and the ICOM Master Agreement, the earlier versions of those documents have some section numbers that differ from the 1997 versions. These differences have been noted parenthetically in those Addenda and, if used with those agreements, are the sections referenced. Alternatively, references that do not apply in the particular case may be eliminated in the final Addendum that is executed.

There are three main points covered by each Addendum: (1) definitions and scope to establish the coverage of the Addendum and the link to the Master Agreement; (2) the relationship of the Master Agreement to Confirmations; and (3) the effect of the occurrence of a Disruption Event.

1. DEFINITIONS AND SCOPE.

Paragraph 1(a) of each Addendum makes it clear that the term "Agreement" includes the provisions of the Addendum. Paragraph 1(b) makes it clear that the use of the terminology from the Definitions in an Addendum or a Confirmation shall be deemed to refer to transactions under the Master Agreement. For example, although the term "FX Transaction" in the Definitions is also used in Master Agreements covering such Transactions, the term "Option" is used in the FEOMA and the ICOM Master Agreement for currency option transactions, whereas the Definitions use the term "Currency Option Transaction." Thus, if the Addendum appropriate for a particular Master Agreement has been executed, as a result of paragraph 1(b) practitioners can use the terminology in the Definitions in a Confirmation without conforming that terminology to that in the Master Agreement. Finally, paragraph 1(c) makes it clear that terms in the Addendum have the meanings given in the Definitions unless otherwise provided in the Addendum.

Paragraph 2(a) of the Addenda provides that the Definitions shall be deemed applicable to any FX Transaction (in the case of the FEOMA and the IFEMA) or Currency Option Transaction (in the case of the FEOMA and the ICOM Master Agreement) covered by a Master Agreement, whether or not so stated in a Confirmation. The advantage of this provision is that parties will not need to have express provisions in their Confirmations in order to have the protections offered by certain Disruption Events and Disruption Fallbacks. Under the Definitions, certain Disruption Events and Disruption Fallbacks apply to non-deliverable transactions even when the parties have made no elections of the same in the Confirmation. These Disruption Events and Fallbacks apply "by default" in the sense that they are operative although the Confirmation does not refer to them.

(See Part 3 below for further discussion of Disruption Events and Disruption Fallbacks.) In the case of Transactions where "straight-through" processing is the norm for Confirmations, this is clearly an advantage. However, if the parties do not incorporate the Definitions in a Confirmation, paragraph 2(a) of the Addendum ensures that the parties get these protections. Of course, it is still necessary for the parties to make elections in the Confirmation for a particular Transaction if they desire to modify the Disruption Events or Disruption Fallbacks that otherwise apply "by default" or to apply other "non-default" Disruption Events or Fallbacks to the Transaction.

Note that the intent of paragraph 2(a) is that the Definitions will apply to any Transactions under a Master Agreement outstanding on the date that the Addendum is executed. Thus, when an Addendum is in place there is no need to execute new Confirmations for such Transactions (as well as for new Transactions) or an amendment to get the protections afforded by the Definitions. Of course, if the parties wish to provide otherwise for any particular Transaction or group of Transactions, they should so state in the Addendum or elsewhere.

Paragraph 2(b) of the Addendum establishes the order of priority in the case of inconsistencies. The rule for a particular Transaction, including any outstanding Transaction, is that the Confirmation governs over contrary provisions in the Definitions. As for inconsistencies between the Definitions and the Master Agreement, the Definitions shall prevail. Thus the general rule is that the Confirmation has priority over the Definitions and the Master Agreement and the Definitions have priority over the Master Agreement for all Transactions (but see the next section).

2. CONFIRMATIONS.

For FX Transactions the U.S. versions of the FEOMA and the IFEMA contain an exception to the rule that the Confirmation governs in the event of inconsistencies with a Master Agreement. Paragraph 3 of the FEOMA and the IFEMA Addenda reverses this rule with respect to Non-Deliverable FX Transactions. The reason for the existing rule in the U.S. FEOMA and IFEMA is that most FX Transaction Confirmations are issued through straight-through processing. Straight-through processing means that the Confirmation is issued automatically upon entry of trade details without any manual intervention in drafting it; an example would be Confirmations sent by SWIFT message or issued automatically and mailed on a pre-printed form. Market participants were concerned that a rule providing for primacy of the Confirmation in such cases could lead to inadvertent changes to the Master Agreement or at least to the provisions that apply to a particular FX Transaction. For example, some Confirmations are prepared with printed boilerplate that may go far beyond or conflict with what is in the FEOMA or the IFEMA.

Currency Option Transactions do not raise this level of concern because they generally are not subject to straight-through processing. Unusual or conflicting provisions in Confirmations for such Transactions are likely to be noticed and negotiated and, if accepted, not accepted inadvertently. Confirmations for Non-Deliverable FX Transactions are believed to be more like those for Currency Option Transactions. Thus, paragraph 3 of the FEOMA and IFEMA Addenda makes it clear that the terms of a Confirmation for a Non-Deliverable FX Transaction shall govern in the event of inconsistency with provisions of the Master Agreement notwithstanding any provision in the FEOMA or the IFEMA to the contrary. Furthermore, this will also be the rule for Deliverable FX Transactions under clause (ii) of paragraph 3 of the FEOMA and IFEMA Addenda if the Confirmation explicitly so states that it shall prevail and has been signed or exchanged by both parties (i.e., not just accepted because of a failure to object as provided in Section 11.15 of the U.S. FEOMA and Section 8.15 of the U.S. IFEMA). If the parties have entered into the BBA version of the FEOMA or the IFEMA, they should consider adapting the provisions in paragraph 3 of the Addenda to that version.

In sum, the usual rule of priority in the case of inconsistencies is that the Confirmation has priority over both the Definitions and the Master Agreement and the Definitions have priority over the Master Agreement. In the case of Deliverable FX Transactions that have not been confirmed under one of the special methods provided in clause (ii) of paragraph 3, however, the provision in the U.S. FEOMA and IFEMA that the Master Agreement has priority over the Confirmation is preserved because the definition of "Confirmation" in the Definitions specifies that the Confirmation must be "effective." This is intended to include effectiveness under the rule of the particular Master Agreement as to priority of the Confirmation versus the Master Agreement for particular types of Transactions.

3. DISRUPTION EVENTS.

The Definitions provide additional flexibility and protection in the event of the occurrence of a variety of events beyond the parties' control, termed "Disruption Events" in the Definitions. The Disruption Events include disappearance of price sources needed to settle Non-Deliverable FX or Currency Option Transactions, inconvertibility and various types of exchange controls and other events that might affect a party's ability to settle. Each Disruption Event, if applicable, is linked to certain Disruption Fallbacks that are intended to provide settlement alternatives if the conditions of the relevant Disruption Event are in effect. Although some Disruption Events and Fallbacks may apply even if not specifically chosen by the parties, for some or all of their Transactions, the parties most likely will desire to negotiate and specify in the Confirmation precisely which Disruption Events and Fallbacks apply. See the Definitions practice notes for a more detailed explanation of the Disruption Events and Disruption Fallbacks.

A Disruption Event that applies to a Transaction may also be or become a force majeure event, an illegality or similar event covered by Section 9 of the FEOMA or the equivalent provisions in the IFEMA and the ICOM Master Agreement. Section 9 generally provides for a right of the party whose ability to settle is not affected by such an event to close out affected Transactions. It would not be appropriate to exercise such a right for a particular Transaction, however, if the parties had agreed that Disruption Events and Fallbacks in the Definitions should apply to the Transaction. Therefore, paragraph 4 of the Addenda (paragraph 3 in the ICOM Addendum) provides that, if a Disruption Event is applicable, Section 9 would not be applicable. This means that if the parties have specified a Disruption Event as applicable, the provisions of the Definitions, including any applicable Disruption Fallbacks, will govern the parties rights and obligations instead of the close-out, transfer and other provisions of Section 9, whether or not the relevant Disruption Event has occurred.

Note that the Definitions provide that if none of the otherwise applicable Disruption Fallbacks provide the parties with a means of settlement then "No Fault Termination" under Section 5.2(f) of the Definitions shall be applicable. Thus, if the parties have specified a Disruption Event as applicable and none of the otherwise applicable Disruption Fallbacks provides a means of settlement, No Fault Termination would be applicable in lieu of the provisions in Section 9, as noted in the parenthetical in paragraph 4 of the Addenda (paragraph 3 in the ICOM Addendum).

Finally, paragraph 5 of the FEOMA and IFEMA Addenda provides that Part VI of the Schedule to the FEOMA or IFEMA is to apply. Part VI of the Schedule to each Master Agreement adds provisions adapting the close-out provisions of the Master Agreements to cash-settled (i.e., Non-Deliverable) FX Transactions. The purpose of including paragraph 5 of the FEOMA and IFEMA Addenda is to make the cash-settlement close-out provision applicable in case the parties have not done so. Presumably, parties that decide to apply the Definitions to their Transactions will be entering into Non-Deliverable FX Transactions and need the modification to the close-out provisions contained in Part VI. Parties are free to adopt alternative close-out provisions if they wish, but they should make this clear in the Addendum or elsewhere. The cash-settlement close-out provision is not included in the ICOM Addendum since it does not apply to Currency Option Transactions.

March 5, 1998

DISCLAIMER

This Guide and the related forms of documentation do not necessarily reflect the views of the Federal Reserve Bank of New York or any other component of the Federal Reserve System, or of the Foreign Exchange Committee, the Financial Markets Lawyers Group or any of their members. This Guide and such documentation do not purport to be legal advice with respect to a particular transaction or situation. If legal advice or other expert assistance is required, the services of a qualified professional should be obtained.

Addendum dated as of ___________, ____ to the

Foreign Exchange and Options Master Agreement dated as of ___________, ____

(the "Master Agreement")

between __________________ ("Party A") and ___________________ ("Party B")

The Schedule to the Master Agreement is amended by adding the following Part ______: Part _____. 1998 FX and Currency Option Definitions.

The 1998 FX and Currency Option Definitions as published by ISDA, EMTA and the Foreign Exchange Committee (the "Definitions") shall be applicable to each FX Transaction and Option under the Agreement, including any FX Transaction or Option outstanding on the date hereof, subject to the following:

1. DEFINITIONS.

(a) The term "Agreement" in Section 2.2 of the Master Agreement shall include the Master Agreement as modified and supplemented by this Part.

(b) The terms "FX Transaction" and "Currency Option Transaction" in the Definitions or in a Confirmation shall in all cases be considered references to an "FX Transaction" and "Option," respectively, under the Agreement.

(c) All terms in this Part shall have the meanings given them above or in the Definitions, unless not defined above or in the Definitions, in which case the term shall have the meaning given in the Master Agreement.

2. SCOPE.

(a) Notwithstanding the absence of any reference to the Definitions in a Confirmation, this Part and the Definitions shall be applicable to any FX Transaction or Currency Option Transaction covered by the Master Agreement; provided that the Parties may agree otherwise for any Transaction as evidenced by a Confirmation that complies with Section 2.3 of the Master Agreement.

(b) In the event of any inconsistency between the Definitions and a Confirmation, the terms of the Confirmation shall govern for the purpose of the relevant Transaction. In the event of any inconsistency between the Definitions and the Master Agreement, the Definitions shall prevail.

3. CONFIRMATIONS.

Notwithstanding Sections 2.4 and 11.12 of the Master Agreement, (i) in the event of any inconsistency between the terms of a Confirmation for a Non-Deliverable FX Transaction and the Master Agreement, the terms of the Confirmation shall prevail and (ii) in the event of any inconsistency between the terms of a Confirmation for a Deliverable FX Transaction and the Master Agreement, the terms of the Confirmation shall prevail if either the Confirmation explicitly states that it shall so prevail and has been signed by both Parties or Confirmations so stating have been exchanged as provided in Section 2.3 of the Master Agreement.

4. DISRUPTION EVENTS.

With respect to any Disruption Event that is applicable to an FX Transaction or Currency Option Transaction pursuant to the Definitions or as otherwise agreed by the Parties as evidenced by a Confirmation, Section 9 of the Master Agreement shall not be applicable in respect of such FX Transaction or Currency Option Transaction, and the Parties shall be subject to the Disruption Fallbacks (including but not limited to No Fault Termination) specified as applicable pursuant to the Definitions or such Confirmation.

5. MISCELLANEOUS.

The provisions of Part VI of the Schedule relating to cash settlement of FX Transactions shall apply to Non-Deliverable FX Transactions.

ACCEPTED AND AGREED:

PARTY A:

*By*____

Name:

Title:

PARTY B:

*By*____

Name:

Title:

Addendum dated as of ___________, ____ to the International

Currency Options Market Master Agreement dated as of ___________, ____

(the "Master Agreement")

between __________________ ("Party A") and ___________________ ("Party B")

The Schedule to the Master Agreement is amended by adding the following Part _____:

Part _____. 1998 FX and Currency Option Definitions.

The 1998 FX and Currency Option Definitions as published by ISDA, EMTA and the Foreign Exchange Committee (the "Definitions") shall be applicable to each Option under the Agreement, including any Option outstanding on the date hereof, subject to the following:

1. DEFINITIONS.

(a) The term "Agreement" in Section 2.2 of the Master Agreement shall include the Master Agreement as modified and supplemented by this Part.

(b) The term "Currency Option Transaction" in the Definitions or in a Confirmation shall in all cases be considered references to an "Option" under the Agreement.

(c) All terms in this Part shall have the meanings given them above or in the Definitions, unless not defined above or in the Definitions, in which case the term shall have the meaning given in the Master Agreement.

2. SCOPE.

(a) Notwithstanding the absence of any reference to the Definitions in a Confirmation, this Part and the Definitions shall be applicable to any Currency Option Transaction covered by the Master Agreement (including outstanding Currency Option Transactions); provided that the Parties may agree otherwise for any Currency Option Transaction as evidenced by a Confirmation that complies with Section 2.3 of the Master Agreement.

(b) In the event of any inconsistency between the Definitions and a Confirmation, the terms of the Confirmation shall govern for the purpose of the relevant Transaction. In the event of any inconsistency between the Definitions and the Master Agreement, the Definitions shall prevail.

3. DISRUPTION EVENTS.

With respect to any Disruption Event that is applicable to a Currency Option Transaction pursuant to the Definitions or as otherwise agreed by the Parties as evidenced by a Confirmation, Section 9 (Section

10 in 1992 ICOM) of the Master Agreement shall not be applicable in respect of such Currency Option Transaction, and the Parties shall be subject to the Disruption Fallbacks (including but not limited to No Fault Termination) specified as applicable pursuant to the Definitions or such Confirmation.

ACCEPTED AND AGREED:

PARTY A:

*By*____
Name:
Title:

PARTY B:

*By*____
Name:
Title:

Addendum dated as of ___________, ____ to the International

Foreign Exchange Master Agreement dated as of ___________, ____

(the "Master Agreement")

between __________________ ("Party A") and ___________________ ("Party B")

The Schedule to the Master Agreement is amended by adding the following Part ____: Part ____. 1998 FX and Currency Option Definitions.

The 1998 FX and Currency Option Definitions as published by ISDA, EMTA and the Foreign Exchange Committee (the "Definitions") shall be applicable to each FX Transaction under the Agreement, including any FX Transaction outstanding on the date hereof, subject to the following:

1. DEFINITIONS.

(a) The term "Agreement" in Section 2.2 of the Master Agreement shall include the Master Agreement as modified and supplemented by this Part.

(b) The term "FX Transaction" in the Definitions or in a Confirmation shall in all cases be considered references to an "FX Transaction" under the Agreement.

(c) All terms in this Part shall have the meanings given them above or in the Definitions, unless not defined above or in the Definitions, in which case the term shall have the meaning given in the Master Agreement.

2. SCOPE.

(a) Notwithstanding the absence of any reference to the Definitions in a Confirmation, this Part and the Definitions shall be applicable to any FX Transaction covered by the Master Agreement; provided that the Parties may agree otherwise for any FX Transaction as evidenced by a Confirmation that complies with Section 2.3 of the Master Agreement.

(b) In the event of any inconsistency between the Definitions and a Confirmation, the terms of the Confirmation shall govern for the purpose of the relevant Transaction. In the event of any inconsistency between the Definitions and the Master Agreement, the Definitions shall prevail.

3. CONFIRMATIONS.

Notwithstanding Sections 2.4 (8.15 in 1993 IFEMA) and 8.12 (8.16 in 1993 IFEMA) of the Master Agreement, (i) in the event of any inconsistency between the terms of a Confirmation for a Non-Deliverable FX Transaction and the Master Agreement, the terms of the Confirmation shall prevail and (ii) in the event of any inconsistency between the terms of a Confirmation for a Deliverable FX Transaction and the Master Agreement, the terms of the Confirmation shall prevail if either the Confirmation explicitly states that it shall so prevail and has been signed by both Parties or Confirmations so stating have been exchanged as provided in Section 2.3 of the Master Agreement.

4. DISRUPTION EVENTS.

With respect to any Disruption Event that is applicable to an FX Transaction pursuant to the Definitions or as otherwise agreed by the Parties as evidenced by a Confirmation, Section 6 of the Master Agreement shall not be applicable in respect of such FX Transaction, and the Parties shall be subject to the Disruption Fallbacks (including but not limited to No Fault Termination) specified as applicable pursuant to the Definitions or such Confirmation.

5. MISCELLANEOUS.

The provisions of Part VI of the Schedule relating to cash settlement of FX Transactions (no equivalent provision in 1993 IFEMA) shall apply to Non-Deliverable FX Transactions.

ACCEPTED AND AGREED:

PARTY A:
*By*____
Name:
Title:

PARTY B:
*By*____
Name:
Title:

COMMITTEE LETTER

ON HANDLING OF STOP-LOSS ORDERS IN AN ELECTRONIC TRADING ENVIRONMENT

New York, NY 10045
Telephone: *212 720-6651*
Facsimile: *212 720-1655*
E-Mail: *fx.committee@ny.frb.org*
http://www.ny.frb.org/fxc/fxc.html

January 28, 1998

Dear Foreign Exchange Professional:

The growth of twenty-four hour electronic trading and the corresponding increase in price transparency have had a profound impact on the structure of the foreign exchange market in recent years. Many issues surrounding these changes were addressed by the Foreign Exchange Committee in its publication of *A Survey Assessing the Impact of Electronic Broking on the Foreign Exchange Market*. That survey also highlighted an ongoing need to establish standard market practices and conventions for electronic trading. One such issue that warrants management attention relates to the handling of stop-loss orders in an electronic trading environment.

In recent Committee discussions, members have identified the increased risks and obligations of holding stop-loss orders in an environment in which trades may be matched electronically twenty-four hours a day, seven days a week. Although these risks apply equally to trades matched through conventional voice brokers, members have suggested that the prevalence of electronic trading has made the potential risk of holding stop-loss orders more acute. The most significant concerns expressed by Committee members involve weekend trading when illiquid market conditions might exaggerate price moves and trigger stop-loss orders. Such situations give rise to at least two scenarios that potentially expose institutions to risk, depending upon the course of action taken by the dealer handling the order:

A. Dealer executes stop-loss orders as instructed only to have prices immediately rebound when liquidity returns to the market. Customers in this scenario may question why they were stopped out of positions for an apparent pricing anomaly.

B. Dealer refrains from executing stop-loss orders because the breach occurs during illiquid off-hour conditions, but prices do not rebound when liquidity returns to the market. Stop-loss orders are ultimately executed during routine business hours, but at rates less advantageous than those prevailing during the off-hour period when the orders were first technically triggered. Customers in this scenario may allege that they were harmed because their stop-loss orders were not immediately executed when triggered at the better rate.

To avoid disputes arising from these types of scenarios, the Committee advises that foreign exchange dealers educate customers about the special circumstances that can occur with stop-loss orders in an electronic trading environment. In particular, the Committee recommends that dealers establish guidelines with customers regarding the applicability of electronically traded prices during illiquid off-hour conditions. For example, dealers may wish to inform customers that stop-loss orders will remain valid only from Monday 6:00 am Sydney through Friday 5:00 pm New York, the time frame presently specified in the barrier option addendum to the Foreign Exchange and Option Master Agreement. Copies of the barrier option addendum and other Committee publications may be viewed online or downloaded for later viewing from the Foreign Exchange Committee's World Wide Web site at *www.ny.frb.org/fxc/fxc.html*, or are available by contacting the Committee's Executive Assistant at 212-720-6651.

Please feel free to contact me, members of the Committee, or the Committee's Executive Assistant with any questions or comments regarding this letter.

Sincerely,

John J. Finigan, Jr.
Chairman

DOCUMENT OF ORGANIZATION

It was generally agreed that any new forum for discussing matters of mutual concern in the foreign exchange market (*and where appropriate off-shore deposit markets*) should be organized as an independent body under the sponsorship of the Federal Reserve Bank of New York. Such a Committee should

1. be representative of institutions participating in the market rather than individuals;
2. be composed of individuals with a broad knowledge of the foreign exchange markets and in a position to speak for their respective institutions;
3. have sufficient stature in the market to engender respect for its views, even though the Committee would have no enforcement authority;
4. be constituted in such a manner as to ensure fair presentation and consideration of all points of view and interests in the market at all times; and
5. notwithstanding the need for representation of all interests, be small enough to deal effectively with issues that come before this group.

THE OBJECTIVES OF THE COMMITTEE ARE:

- **to provide** a forum for discussing technical issues in the foreign exchange and related international financial markets;
- **to serve** as a channel of communication between these markets and the Federal Reserve and, where appropriate, to other official institutions within the United States and abroad;
- **to enhance** knowledge and understanding of the foreign exchange and related international financial markets, in practice and theory;
- **to foster** improvements in the quality of risk management in these markets;

A feasibility study recommending the creation of the Foreign Exchange Committee was first conducted in June 1978. The resulting "Document of Organization" represents the study's conclusions and has been periodically updated (most recently in January 1997) to reflect the Committee's evolution.

- **to develop** recommendations and prepare issue papers on specific market-related topics for circulation to market participants and their management; and
- **to work** closely with FOREX and other formally established organizations representing relevant financial markets.

THE COMMITTEE

In response to the results of the study, the Federal Reserve Bank of New York agreed to sponsor the establishment of a Foreign Exchange Committee. It was agreed that

1. The Committee should consist of no more than thirty members. In addition, the president of FOREX is invited to participate.
2. Institutions participating in the Committee should be chosen in consideration of a) their participation in the exchange market here and b) the size and general importance of the institution. Selection of participants should remain flexible to reflect changes as they occur in the foreign exchange market.
3. Responsibility for choosing member institutions rests with the Federal Reserve Bank of New York. The Membership Subcommittee, chaired by a Federal Reserve Bank official, advises the Federal Reserve on membership issues.
4. The membership term is four calendar years. A member may be renominated for additional terms; however, an effort will be made to maximize participation in the Committee by institutions eligible for membership.
5. Members are chosen with regard to the firm for which they work, their job responsibilities within that firm, their market stature, and their ongoing role in the market.

The composition of the Committee should include: New York banks; other U.S. banks; foreign banks; investment banks and other dealers; foreign exchange brokerage firms (preferably to represent both foreign exchange and Eurodeposit markets); the president of FOREX USA, Inc. (*ex officio*); and the Federal Reserve Bank of New York (*ex officio*).

COMMITTEE PROCEDURES

The Committee will meet at least eight times per year (*that is, monthly with the exception of April, July, August, and December*). The meetings will follow a specified adenda; the format of the discussion, however, will be informal.

Members are expected to attend all meetings.

Any recommendation the Committee wishes to make on market-related topics will be discussed and decided upon only at its meetings. Any recommendation or issue paper agreed to by the Committee will be distributed not only to member institutions, but also to institutions that participate in the foreign exchange market.

The Membership Subcommittee will be the Committee's one standing Subcommittee. A representative of the Federal Reserve Bank of New York will serve as Chairman of the Membership Subcommittee. The Membership Subcommittee will aid in the selection and orientation of new members. Additional Subcommittees composed of current Committee members may be organized on an adhoc basis in response to a particular need.

There will be two standing Working Groups: the Operations Managers Working Group and the Risk Managers Working Group. The Working Groups will be composed of market participants with an interest in and expertise necessary to complete projects assigned by the Committee.

Committee members will be designated as Working Group Liaisons. The Liaisons' role is primarily one of providing guidance to the Working Group members and fostering effective communication between the Working Group and the Committee. In addition, a representative of the Federal Reserve Bank of New York will also be assigned as an advisor to each Working Group.

The Committee may designate additional adhoc working groups to focus on specific issues.

Depending on the agenda of items to be discussed, the Committee may choose to invite other institutions to participate in discussions and deliberations.

Summaries of discussions of topics on the formal agenda of Committee meetings will be made available to market participants by the Federal Reserve Bank of New York on behalf of the Committee. The Committee will also publish an annual report which will be distributed widely to institutions that participate in the foreign exchange market.

Meetings of the Committee will be held either at the Federal Reserve Bank of New York or at other member institutions.

In addition to the meetings provided for above, a meeting of the Committee may be requested at any time by two or more members.

RESPONSIBILITIES OF COMMITTEE MEMBERS

The Foreign Exchange Committee is composed of institutions that participate actively in the foreign exchange markets as well as other financial markets worldwide. As a senior officer of such an institution, the Committee member has acquired expertise that is invaluable to attaining the Committee's objectives. The member's continuous communication with the markets worldwide generates information that is necessary to the Committee's deliberations on market issues or problems. Effective individual participation is critical if the collective effort is to be successful. The responsibilities of membership apply equally to all Committee members.

The specific responsibilities of each member are:

- **to function** as a communicator to the Committee and to the marketplace on matters of mutual interest, bringing issues and information to the Committee, contributing to discussion and research, and sounding out colleagues on issues of concern to the Committee;
- **to present** the concerns of his or her own institution to the Committee; in addition, to reflect the concerns of a market professional as well as the constituency from which his or her institution is drawn or the professional organization on which he or she serves; and
- **to participate** in Committee work and to volunteer the resources of his or her institution to support the Committee's projects and general needs.

INDEX TO 1988-1997 ANNUAL REPORTS

Note: The 1988 Annual Report includes a cumulative index for the years 1979 through 1987.

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