

**INTERNATIONAL SWAPS AND
DERIVATIVES ASSOCIATION, INC.**

**GUIDELINES FOR COLLATERAL
PRACTITIONERS**

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CHAPTER ONE

INTRODUCTION TO COLLATERALIZATION OF PRIVATELY NEGOTIATED DERIVATIVES TRANSACTIONS

1. ORIGIN OF THE GUIDELINES

The Guidelines for Collateral Practitioners (“the Guidelines”) grew out of the formation of the ISDA Collateral Working Groups in 1996. Concerned collateral practitioners, led by David Maloy of Warburg Dillon Read (the investment banking division of UBS AG) and Michael Clarke of J.P. Morgan, were looking for support as they embarked on a new business activity for their firms. The Collateral Working Groups organized themselves to address the issues that members faced on a daily basis that had no precedent in the existing derivatives business.

The publication of the International Swaps and Derivatives Association (“ISDA”) credit support documentation for use under New York, English and Japanese law contributed to the accelerating use of collateral for derivatives transactions by major dealers. Collateralization of transactions became one of the primary credit risk mitigation techniques. It allowed dealers to expand their range of corporate counterparties as well as free credit lines with existing counterparties. The unique characteristics of derivatives transactions created a new operational need requiring the creation of a new set of activities in the areas of credit, documentation, transaction valuation, collateral valuation, and collateral management.

As each institution faced the challenge of designing policies, practices, systems and operations to address these new requirements, the collateral practitioners within the ISDA membership realized that communication among industry participants would facilitate the development of collateralization which was in the interests of all participants. After much discussion, they came to the conclusion that it would be extremely useful to form a group to examine the issues and the challenges of collateral management for derivatives transactions as a group. Within the context of the Collateral Working Groups, they began to identify the areas of interest for discussion and it became apparent that there was enough material to create a Guidelines document that could be distributed to all ISDA members.

Interested members of the Collateral Working Groups formed focus groups in London and New York under the leadership of Kishwer Aziz of Citibank (in London) and Vicky Manasses of ABN AMRO Bank N.V. (in New York). In consultation with the larger Collateral Working Group, the focus groups identified topics for the Guidelines including: collateral eligibility and haircuts, communication tools, credit issues, legal issues, systems and operations, and valuation issues. Each focus group was responsible for writing sections of the guidelines and a list of focus group members is included in Appendix 1. While all focus group members contributed to the Guidelines, special thanks go to Richard Evans (Euroclear), Stephanie Grady (Citibank), Neil Smith (Abbey National), Claude Brown (Clifford Chance) Adedisi Adekunle (Societe Generale), Penny Davenport (JP Morgan), Chris Bucchino (Morgan Stanley) Phil Bokovoy (Bank of America), Karen

Arneson (Bank of America), Stephanie Swanton (Sungard), Patrick Harris (Goldman Sachs) and Angela Brojan (Bear Stearns) who actually undertook to author various sections of the Guidelines. Drafts of the Guidelines were reviewed by members of the Collateral Working Groups, outside counsel, and the ISDA Board of Directors. Since both the individual participants and their employers contributed towards the preparation of the Guidelines, participants are identified by reference to the organizations with which they were associated during the preparation process.

The Guidelines are structured as a map to the collateralization process so that issues are presented in an operational framework rather than isolated by topic. Chapter Two, "Structuring the Collateralized Relationship" discusses how to structure the collateralized relationship from credit and documentation perspectives, both of which need to be addressed before any collateralized relationship becomes operational. Chapter Three, "Implementing the Collateralized Relationship" focuses on the operational set up once a collateral agreement has been executed, including the mechanics of establishing a collateral account, the valuation of the collateral and counterparty relationship management. Chapter Four, "Maintaining the Collateralized Relationship", focuses on the ongoing operational and communication aspects of the collateral relationship. We hope that this organization will assist the practitioner in assessing the appropriate information based on where in the process questions arise. We believe that this will serve as a tool in the credit management and operational environments.

2. OBJECTIVES OF THE GUIDELINES

It is the hope of the ISDA Board of Directors and the Collateral Working Groups that the Guidelines will serve as a useful reference resource for institutions already engaged in managing collateral for derivatives transactions and those institutions contemplating establishing or expanding their activities in collateral management. The document reflects the state of development as of mid-1998; however, in an area as dynamic as collateral management for derivatives transactions, it is important for each institution to keep abreast of developments in the area and changing market standards. We expect that practice will evolve as institutions gain more experience. Inevitably, new types of transactions will be collateralized, new types of collateral will be accepted, regulatory rules will change regarding capital requirements for collateralized transactions, and the legal environment will change. In addition, each institution manages counterparty relationships according to its own criteria, manages a different mix of product and business lines, and structures its operations and systems requirements to meet the needs of its own portfolio of business and customers. One or all of these factors may result in differing approaches and standards for collateralization.

In addition, the Guidelines deal in various sections with basic legal issues. These sections are intended to give general guidance, not legal advice, to promote a better understanding of the basic principles that underlie collateral arrangements for privately negotiated derivatives transactions. In practice, the law relating to the taking of security and other forms of credit support is complex and varies considerably from jurisdiction to jurisdiction. The precise position will depend on specific facts and circumstances. Accordingly, no reliance should be placed on these Guidelines when considering a specific situation. The precise documentation of each collateral arrangement remains the

responsibility of the parties concerned. ISDA assumes no responsibility for any use to which these Guidelines may be put. In entering into and documenting a collateral arrangement, parties are advised to consider the possible fiscal, monetary, accounting and regulatory requirements of each relevant jurisdiction.

We offer these Guidelines as a starting point for participants in collateralized relationships. As such, the content of the Guidelines is introductory in nature. We believe they reflect current market practice, and hope they will be useful to participants when they discuss the terms of their collateralized relationships. We anticipate revising them as the market evolves to keep them relevant to the participants. It is envisaged that a supplement will be issued in the near future addressing more advanced topics in this area and considering the challenges for collateral practitioners that arose from the periods of extreme market volatility in 1998. Collateralization of privately negotiated derivatives transactions is a powerful and effective risk mitigation technique, and we expect collateral usage to grow dramatically. With this growth, we expect that there will be innovation and we would hope to reflect such innovation in future versions of the Guidelines.

3. COLLATERAL AS A RISK MANAGEMENT TOOL

Collateral is a risk reduction tool, which, like many other such tools, mitigates risk by reducing credit exposure. The effect of collateralization is to substitute the credit risk of the issuer of the collateral for that of the counterparty to the transaction. Collateral reduces credit risk but gives rise to other forms of risk including legal, operational and concentration risk. What is credit risk? Credit risk is the danger that you will not receive an amount of money you are owed because the party that owes you the money is unable to pay you and defaults on its obligation. Credit risk exists whenever an institution has a relationship where a counterparty has an obligation to make payments in the future. This is true for derivatives transactions as well as loans, repurchase agreements, etc.

3.1 Definition and Types of Credit Enhancement

Collateralization is a credit enhancement technique and is a means of mitigating credit risk associated with, in this discussion, privately negotiated derivatives transactions. Collateral is just one such credit enhancement technique, although it is probably the most frequently used in the derivatives business today. Another mechanism widely employed for reducing credit risk involves the application of close-out netting to outstanding derivatives contracts under an ISDA Master Agreement. Credit enhancement techniques range from simple transaction-specific, risk-reducing measures and extend to sophisticated portfolio management techniques (such as the use of credit derivatives).

Transaction-specific exposure reduction methods, such as elective termination rights (also known as credit puts or break clauses), can provide relief in individual situations where a particular transaction generates significant credit exposures. Direct credit support such as cash and securities collateral, indirect credit support such as letters of credit and guarantees, credit risk transfer mechanisms such as direct insurance of risk and credit derivatives are also available tools. Credit derivatives are growing in importance as a means of managing credit risk across an institution's entire credit portfolio. They appear

to be a cost-effective means of mitigating credit risk that can be used in conjunction with collateralization.

3.2. Key Features of Credit Exposure

Credit risk is the probability of a counterparty defaulting on its payment obligations. Credit risk increases the farther away in time the payment is expected, since every additional day increases the possibility that some event may cause an inability to pay. If credit risk is the probability of a counterparty defaulting, what is *credit exposure*? The credit exposure amount is the potential mark to market (“MTM”) exposure over the life of the transaction. The MTM value of a swap is the sum of the present values of the future cash flows associated with the transaction (e.g., the discounted periodic payments over the life of an interest rate swap). The current MTM exposure of a swap is also referred to as the *replacement cost* of the swap. Calculating credit exposure is complex, involving a mathematical combination of the likelihood of a party defaulting, the timing of payments owed, the existence of recourse to collateral or other sources of value, and the size of the payment amount.

The MTM exposure profile of an interest rate swap is approximately zero at the inception of the deal and at maturity. The MTM exposure amount is the current market value of the transaction. Since the price of an interest rate swap is equal to the present value of the fixed and floating rate payments, the credit risk at inception is minimal because the MTM exposure is zero. Over time, the MTM value (present value of all future cash flows) of the swap will fluctuate with changing market conditions. Two factors influence MTM exposure: the number of payments remaining and the potential movement of random variables on the underlying. The MTM exposure will begin to decrease as the number of payments remaining decreases. This is called the *amortization effect*. The replacement cost is the amount one party would lose if the other party were to default. The rising replacement cost due to changing market conditions is offset by the decreasing number of payments remaining until maturity.

3.3 How Collateral Works in a Swap Transaction

Collateral offsets the expected MTM exposure of the transaction since collateral pledged to secure a transaction can be claimed if the counterparty defaults on its payment obligations during the life of the transaction. If the MTM exposure is fully secured or over-collateralized, you should only lose money if the counterparty defaults at the same time that the collateral loses its value. Ideally, collateral and the underlying transaction should not be highly positively correlated. Selecting appropriate collateral and correlation issues are discussed later.

The collateral delivery/return amounts are based on the difference between the aggregate MTM amount of the portfolio and the market value of the collateral held (if any). Please note that the residual unsecured MTM exposure amount is not zero. Therefore, there is residual credit exposure. Each market participant must decide the level of unsecured exposure to the other party they are willing to accept. This is an internal credit decision that each party must address.

It should also be noted that each firm is exposed to potential operational risk as well. Operational risk is caused when the exposed party either does not call for collateral on a timely basis, calls for an incorrect amount, or misses a collateral call completely. Operational risk is also presented by the potential for failures on the custody side (i.e. settlement failures). Such risks may result in an actual loss if the other party were to default.

As discussed above, other credit enhancement techniques are available to market practitioners such as netting, third-party guarantees, establishing a specialized derivatives subsidiary (a Derivative Products Company (DPC) or Special Purpose Vehicle (SPV)) and cash-settlement provisions. These credit enhancement techniques are not mutually exclusive. Collateral can be used in conjunction with other techniques and is usually not the sole method of reducing credit risk.

A market participant may be collateralizing with Party A, establishing rating trigger provisions with Party B and operating a cash-settlement agreement with Party C. In general, each institution must assess its appetite for credit exposure and decide which method is most suitable for a specific counterparty or transaction type. It is important to note that collateral is suitable for many market participants but it is not suitable for everyone. Jurisdictional issues, netting laws and client preferences are important considerations in deciding which risk-reduction method is most suitable. In certain jurisdictions, there may be laws or regulations restricting or prohibiting the pledging of collateral by certain types of financial institution. Nevertheless, collateral does appear to be the most widely used credit enhancement tool in the industry today. It is not as capital intensive as a DPC or SPV, does not require cumbersome liquidation of positions as do early termination provisions or involve third parties as do guarantees. Collateralization offers firms flexibility in managing their credit exposures and increases the amount of business that they are able to do with particular counterparties.

Reducing credit risk may increase legal and operational risk. Unlike credit risk, it is not common practice to quantify legal and operational risk. Although these risk measures are not readily quantifiable, they are significant. Establishing a collateral program that mitigates credit risk while minimizing legal and operational risks is the goal of most institutions. The key to a successful collateral program is to implement policy and procedures using an interdisciplinary approach. Collateral programs are a team effort, and require communication and coordination across several functions such as marketing, legal, credit, operations, and systems. Coordinating such an effort at a global level poses many challenges and tests the corporate culture of an institution.

3.4. Types of Securities Used and Trends

The type of collateral used tends to vary from jurisdiction to jurisdiction. In the U.S. eligible collateral is typically cash, U.S. Treasury obligations and agency issues but may also include mortgaged backed securities, equities, and corporate bonds. Since liquidity is important in selecting collateral, cash and U.S. Treasury obligations are the most common forms of collateral. As the types of products covered by collateral agreements increase, the list of eligible collateral expands as well. Due to the increase in popularity of asset swaps, the use of equities and emerging market debt as collateral has also increased. Currently,

European counterparties generally accept G7 debt obligations and in some instances G10 debt obligations as well as European currencies.

3.5 Benefits and Costs of Using Collateral

Collateral and its benefits can best be explained from a historical perspective. During the past 10 years the derivatives market has experienced exponential growth. According to the International Swaps and Derivatives Association's annual market survey, the notional principal amount of interest rate swaps, currency swaps and interest rate options outstanding has grown from \$4.45 trillion in 1991 to \$29.035 trillion in 1997. MTM exposure is typically 1% to 2% of notional principal amounts. Market participants, specifically dealers, are now faced with the task of mitigating the inherent credit exposure in derivatives transactions so that they can continue expanding their customer base while remaining within credit and exposure limits, maintaining liquidity and respecting balance sheet constraints. How can collateralization remedy these situations? Why has collateralization become the risk-reduction method of choice?

-Collateralization equalizes the disparity in creditworthiness: financial institutions assign a credit tolerance to each counterparty which is dependent on creditworthiness. By collateralizing the MTM exposure, a counterparty can participate in the derivatives market and maintain its market presence. A triple A rated firm can also expand its customer base by collateralizing transactions with institutions outside its credit parameters. As a result of collateralization, many firms have increased their customer base and increased revenues by collateralizing lower-rated credits, deteriorating credits or unrated counterparties.

-Collateralization can lessen the credit spread that is charged to a counterparty: decreasing credit spreads results in better pricing which may result in increased trade activity and revenues.

-Collateralized transactions may reduce regulatory capital requirements: for institutions affected by the Basle Accord, collateralized transactions may, depending upon the type of collateral used, qualify for a 0% risk weighting. Reducing regulatory capital requirements frees up capital for additional trading.

While there are many benefits to collateralization, there are also costs inherent in a collateral program.

-Professional fees: there are initial and ongoing legal expenses (both of internal and external counsel) associated with the negotiation process and the development and maintenance of necessary documentation. One must also consider the expense associated with input from credit, business operations and systems personnel.

-Operational costs: the start-up costs will consist of a system (whether built internally, bought or leased), staffing for operations functions and systems support. Long-term costs may include system maintenance and enhancements and increased staffing needs.

-Custodians' fees and financing costs: the fees associated with safekeeping of collateral and financing costs incurred in pledging collateral should also be included in the overall cost analysis. Custodians charge fees for safekeeping of collateral as well as fees for delivery/receipt of collateral. The interest rate differential on cash investments may be an additional cost.

Although many of the associated costs are difficult to quantify, they should be considered when assessing potential collateral clients.

4. COLLATERALIZING THE TRADING RELATIONSHIP

4.1. Documenting the Collateralized Relationship

To date, the ISDA Master Agreement and the ISDA Credit Support Documentation (the "CSDs") have been the primary means used to collateralize trading exposure in the privately negotiated derivatives market. On the foreign exchange ("FX") side of that market, many participants have used the International Foreign Exchange Master Agreement ("IFEMA") or the International Currency Options Market Master Agreement ("ICOM"), or a variant, combined with proprietary margin agreements to collateralize FX trading. In the repurchase agreement markets, the PSA Master Repurchase Agreement or the PSA/ISMA Global Master Repurchase Agreement have been used to collateralize trading. Some counterparties have also used a form of a PSA Master Agreement to collateralize privately negotiated options on U.S. government securities.

As a practical matter, there may on occasion be circumstances where it is necessary or desirable for the parties to a collateralized transaction to agree to practices that differ from the terms of their agreed documentation. It is worthy of note that parties who do not follow the terms of their written agreements may add an additional level of risk to the relationship. It is certainly advisable that parties promptly amend written documentation to reflect a changing relationship or evolving market practices.

4.2. Cross-Product Collateralization

When collateral programs were first established, counterparties were securing the net obligations of each product type separately. Generally this meant that each trading desk within an institution was establishing a separate collateral program with separate pools of collateral. Now there is a recognized business need to optimize the use of collateral, and global collateral programs are being established.

The trend towards packaging multiple products for end users has also facilitated cross-product collateralization. For example, securities are often sold with related interest rate or FX hedges. FX options and FX forwards are used to create single hedging strategies, or structured securities are engineered which achieve the end user's ultimate investment goals. With this type of packaging, collateral is pledged against the package of transactions, not individual pieces.

Another trend in the markets has been to collateralize the credit exposure resulting from interest rate and FX derivatives contracts. The trend toward collateralization has been driven by two types of counterparties: large market participants (typically dealers) who often have very large unsecured lines of credit; and leveraged end users whose investment strategies entail taking large positions in the markets using derivatives (typically hedge funds). For the first group of participants, the taking of collateral is primarily an insurance policy; for the second, taking collateral is a precondition of doing business.

As the leveraged end users have increased their participation in transactions, the desire to secure credit exposure across capital markets products has risen markedly due to the clients' desire to post as little collateral as efficiently as possible. Given the leverage of these counterparties, provision of collateral results in a significant funding cost. As financial institutions market financial solutions engineered to meet requirements of these counterparties, more and more single products are packaged together. Many of these individual products act as hedges, so the product may have both significant positive and negative credit exposures. To date, market participants have largely been responding to these business needs in an *ad hoc* fashion. Chapter Two discusses the major issues involved in cross-product collateralization, suggests ways of analyzing and resolving the issues, and suggests some actions that market participants might undertake to reduce risk.

5. ORGANIZATIONAL STRUCTURE OF COLLATERAL GROUPS

Collateralizing a relationship crosses functional lines and responsibilities in an organization as well as legal entities and geographic locations. Trading, credit, legal, risk management, and operations areas in multiple entities on a global level need to participate in the collateralization process. An institution should consider developing a well-defined set of guidelines that set the parameters for what is appropriate policy and procedure. This will enable all participants in the process to work from commonly understood standards and will avoid later problems arising from the application of different collateralization criteria in different parts of the organization. These standards, policies and procedures should be documented and communicated effectively to all areas in the firm that participate in the collateralized relationship. Collateral management is very much a team effort within an organization, and it is important that all members of the team understand the information flow. Information flow is also critical to an effective collateral management process. Collateralization is a dynamic process, and the nature of the collateralized relationship will change over time. Effective mechanisms for communicating any new developments in the credit status of the counterparty are needed. This will help avoid financial or relationship difficulties.

As collateralization is used more broadly within an organization, collateral management should be handled differently depending on how many products are involved, what existing systems look like, how the firm is currently organized, and the size of the collateralized portfolio of transactions. The initiation of a collateralized relationship typically begins with the business manager/trader, credit officer, and legal representative in consultation with collateral custody and management teams. These individuals determine the need for a collateral arrangement, the terms of the credit support arrangements and execute the CSD. Next the collateral manager takes over the monitoring and managing of

the relationship with the assistance of operations staff. Sometimes the collateral management area will be housed in credit, sometimes in operations, and sometimes it stands alone in an organization. The establishment of an independent collateral management group usually occurs when a firm has moved beyond the separate collateralization of derivative transactions under the CSD, and begins cross-product collateralization which looks at the entire counterparty relationship across an institution .

Staffing has proved a challenge for most collateral management areas. While operations and credit experience is helpful, it is also important to have staff involved who understand traditional securities movement issues. Since collateralization requires an interface with traditional custodian and safekeeping functions, staff who understand the protocol and conventions surrounding securities transfers can make a valuable contribution to effective collateral management groups. However they also need to understand the complexities of the privately negotiated derivatives transactions that are being collateralized. This need for cross-trained personnel has placed considerable strains on the pool of qualified individuals. However, as the use of collateral develops and practice becomes routine, more professionals in the market will develop the appropriate experience.

CHAPTER TWO

STRUCTURING THE COLLATERALIZED RELATIONSHIP

1. CREDIT CONSIDERATIONS

1.1 Is Collateral a Suitable Credit Enhancement Tool?

In some circumstances, collateralizing the relationship is not the optimal way of addressing credit issues. To determine whether collateralization is appropriate, the counterparty's financial position should be analyzed. It is important to note that collateral does not turn a bad counterparty into a good counterparty - it does not eliminate credit risk. A collateral arrangement will provide assets of value to which you should have recourse in the event of the counterparty's default or bankruptcy/insolvency. An institution should only lose funds under a fully collateralized arrangement (subject to certain legal risks discussed in Section 1.4 of this Chapter) if the direct counterparty defaults and during the default period (prior to liquidation of the collateral) there is a significant increase in MTM exposure or decrease in collateral value held (for example, because of a fall in market prices for the relevant collateral securities or default by the issuer of the collateral securities) after taking into account independent amounts (initial margin) and haircuts on the value of the collateral securities.

Proposals for collateral arrangements typically originate from either business managers, an institution's credit analysis department or the counterparty. The impetus for business managers and credit analysts to propose such arrangements may arise from the following scenarios:

- the credit quality of the counterparty limits or precludes the institution's trading desk from executing transactions;
- a counterparty is approaching or has surpassed the approved MTM exposure amount so that it becomes desirable to take collateral;
- a counterparty is approaching or has surpassed the approved credit exposure limit;
- an institution's credit quality precludes the counterparty from executing transactions so the institution may want to give collateral;
- the counterparty's corporate charter or memorandum of association requires a collateral arrangement with all parties; and
- the institution's credit appetite for leveraged transactions or tenor of transactions depends on the existence of a collateral arrangement;

This list is partial and does not capture all of the possible scenarios.

Once the initial reason for the collateral arrangement proposal is identified, the credit area, with quantitative assistance from the market risk area, can begin the process of determining the credit type or profile of the counterparty. Before the credit area can determine if collateral is appropriate, it should establish the level of acceptable exposure to the counterparty. Most financial institutions run a proprietary financial analysis that results in a “risk rating” used for internal credit rating/monitoring purposes. Only after the credit area determines that collateral arrangements are appropriate for the counterparty, does the process of establishing credit support terms begin.

1.2 Determining the Credit Type of the Counterparty

In addition to considering the “business reasons” for desiring a collateral arrangement, addressing the following issues may be helpful:

- *What is the counterparty type (e.g. dealer, fund manager, end-user, etc.)?*
The counterparty type is an important consideration for most market participants. As the client base continues to expand, firms continually assess which market segments they find attractive from a credit perspective. In addition to the individual counterparty type analysis, concentration risk within a counterparty type is evaluated.
- *Does the counterparty have a public debt rating?*
If so, what rating have the rating agencies assigned and what is the long-term forecast? If the counterparty is not rated, what is the capitalization amount? Does your firm trade with unrated counterparties? If so, will your firm exceed a concentration limit? What is the internal risk rating for the counterparty and is there an appetite for unsecured exposure to the counterparty?
- *For established relationships, what is the size, tenor and volatility of the portfolio?*
Estimating the volatility and tenor of the portfolio enables the credit officer to select appropriate thresholds, collateral types and minimum transfer amounts.
- *For new relationships, what types of products is your firm and/or counterparty proposing to execute?*
What size and tenor is being considered? Selecting the appropriate threshold amount is dependent on the product type and tenor of the transactions since most market participants prefer to limit their credit exposure to volatile and/or long-dated transactions.
- *What are the intentions of the counterparty and your trading desk for future transactions?*
Forecasting future trading volume or product types is difficult and often impossible. There are instances, however, when the customer may be executing a “one-off” transaction or may know that only specific products will be executed

that require collateral. Disseminating this information to the credit officer will result in setting appropriate thresholds.

- *Do you or the client have a negative pledge?*
Both parties will want to check to ensure that the proposed collateral arrangement is not restricted or prohibited by a negative pledge or similar provision in another agreement.
- *Under which jurisdiction is the counterparty organized?*
You will want to be confident that your rights to enforce interest in collateral and/or netting provisions are clear in your counterparty's (and any other relevant) jurisdiction. Please refer further to section 1.4 of this Chapter.
- *Are termination rights appropriate?*
It may be wise to explore alternative credit structures, such as termination rights. Optional cash settlement or mandatory cash settlement are among termination rights provisions that may be used.

In addition to the above considerations, it may also be helpful to determine the counterparty's ability to:

- deliver collateral on a timely basis or hold collateral; and
- measure collateral requirements on a daily, weekly or monthly basis. This may be an important determination when a collateral arrangement with a less sophisticated counterparty is being considered.

1.3 Determining the Appropriateness of Collateral

Upon the completion of the credit analysis and the gathering of the general counterparty information discussed in the section above, the credit officer will determine if collateral is the appropriate credit enhancement tool and will begin identifying appropriate credit support terms to negotiate. In some instances, it may be determined that other provisions, such as guarantees or an option to terminate the transaction may be more helpful.

The process of identifying appropriate credit support terms will involve many considerations such as:

- Is one-way or bilateral collateralization appropriate?
- If bilateral, will all collateral terms be symmetrical or will they take account of the differing credit quality of the counterparties?
- What products will be covered by the agreement?
- Does either party require collateral from the first dollar (or Deutschmark etc.) of exposure, or is it possible to do a certain level of business unsecured?

- Will collateral requirements commence or change upon the occurrence of events that may signal a decline in a party's creditworthiness, such as a rating downgrade or a material adverse change?
- What types of collateral assets does the counterparty usually hold? Are either of the parties considering pledging cash as collateral? If cash is a consideration, are either of the parties expecting to earn interest? If so, in practice, is each of the counterparties able to earn and pay the targeted interest rate proposed by the counterparty? What types of collateral and haircut rates will be proposed to the counterparty?
- Are securities moved via Euroclear, Cedel Bank, DTC, Fed Wire, PTC, etc. or physical delivery?
- If you expect your firm to be the collateral giver, are the set-off rights enforceable? If the collateral is being transferred outright to the collateral taker, the collateral giver should consider the risk of the collateral taker's bankruptcy and of the loss of the collateral. This may be especially problematic if the collateral is untraceable and irretrievable due to the collateral taker selling or rehypothecating/repledging the collateral to another party. In this circumstance, the collateral giver may need to rely upon rights to close out or set off the position, and could be unsecured for any excess claims.
- When volatility impacts exposures significantly, will both parties have the right to call for collateral more frequently?
- What is the valuation period to be?
- Are rehypothecation rights important to either party? Are there enforceability issues? Are there any associated accounting implications (e.g. resulting from the implementation in the U.S. of FASB 125).
- What other covenants should be incorporated into the collateral documentation?
- If the counterparty is a multibranch entity, which branches will be incorporated into the agreement? Is there a positive netting opinion for each jurisdiction in which the counterparty has a branch? Please refer to the Legal/Documentation section for a more detailed discussion of key considerations.

Other Internal Credit Considerations

In taking collateral, there is also a portfolio credit impact which organizations need to consider. Issues such as compound default probabilities and correlation and concentration risk within an institution's collateral pool and between the collateral pool and the underlying credit exposure need to be considered. The collateral pool itself should be well diversified if your institution accepts emerging market debt, corporate bonds or equities in

addition to the more liquid assets. If your institution's collateral arrangements only permit highly liquid collateral, liquidity risk and volatility risk may be viewed as mitigated; therefore, diversification is not necessary. Your institution should consider establishing concentration limits on individual name paper taken as collateral, taking into consideration other institutional exposures to that name, perhaps defined as a set percentage of total collateral taken. Securities issued by the collateral giver are usually not accepted as collateral. It is preferable to accept collateral that is weakly correlated to the counterparty and even better to accept collateral that is totally uncorrelated to the counterparty.

However, even if the relationship is collateralized, internal credit risk monitoring systems may still not reflect the benefits of collateralization, either because of pre-existing systems limitations or the minimal benefits that accrue from the collateralization of a particular counterparty's transactions.

Collateralization will have no effect on your counterparty's default probability, will not improve the counterparty's credit rating and may or may not reduce the credit exposure risk interval or maturity when calculating credit exposure. The major benefit of collateralization should be viewed as an improved recovery rate in the event of default of the counterparty.

1.4 Legal Issues that Influence Credit Decisions

Pledge versus Title Transfer

There are two principal forms of collateral arrangement used in the privately negotiated derivatives market; one based on creation of a pledge or other security interest in the collateral, the other based on title transfer. The legal form and effect of each approach will vary according to the governing law of the collateral arrangement, the nature and location of the collateral and the nature and location of the parties. The two approaches can be distinguished as follows:

- under a pledge, the collateral giver creates a security interest in favor of the collateral taker in securities and/or cash. The securities and/or cash are typically delivered either directly to the taker or to its custodian. The collateral giver generally continues to own the securities and/or cash, subject to the right of the taker to sell the securities and/or take the cash if the collateral giver defaults; whereas
- under title transfer, the collateral giver transfers full title in securities and/or cash to the taker and grants the taker the right to set off or net, on default of the collateral giver, the taker's net exposure to the collateral giver under the Master Agreement against the value of the securities and/or cash. Under this approach, the taker owns the collateral, without restriction, and the collateral giver, if it performs in full, is only entitled to the return of fungible securities and/or repayment of cash in the same currency.

A pledge may require greater formality in its creation and perfection than title transfer, possibly including (depending on the various factors mentioned above) registration, filing or some other form of notification of the pledge and other specific requirements as to the

form and content of the document creating the pledge. The formalities are necessary to “perfect” the pledge, that is, to ensure its formal validity and priority over any third party with a purported claim to the collateral assets. The formalities associated with perfection of a pledge vary in complexity from jurisdiction to jurisdiction. One of the principal advantages of the title transfer mechanism is the absence of such perfection formalities.

The pledge document and/or general law will normally impose certain duties, conditions and restrictions on the collateral taker as to the manner of holding and, possibly, as to the use of the collateral, recognizing that the taker has only a partial and limited interest in the collateral. Under the title transfer approach, there are no such duties, conditions or restrictions. The collateral taker is the outright owner of the collateral, subject only to an obligation to return fungible equivalent securities or repay cash assuming that the collateral giver performs. Under a pledge there are often conditions, restrictions and/or other formalities to comply with on enforcement. For example, it may be necessary to give notice to the collateral giver before enforcing the pledge, or the collateral taker may be under an obligation to obtain insolvency court approval before selling the securities. It is worthy of note that, in the U.S., with respect to certain corporate counterparties and banks, liquidation of collateral and application of proceeds can occur without court approval.

Title transfer may be simpler and more straightforward than obtaining a pledge as a means of taking collateral. The principal potential disadvantages of title transfer are that:

- it may not be enforceable in jurisdictions that do not permit netting or insolvency set-off. There are also a number of jurisdictions that simply do not recognize the concept;
- it may be re-characterized as a form of pledge in certain jurisdictions, negating the advantages that would otherwise apply. There is clearly a significant risk that a title transfer recharacterized as a pledge will, due to a lack of perfection formalities, fail to constitute an effective security interest. In the U.S., for example, the title transfer mechanism is widely used in the stock-lending and repurchase markets but is recognized as being subject to a degree of recharacterization risk; and
- title transfer is not a widely used method of collateralization in the U.S. (although, in New York, there are fewer formalities associated with the pledge approach to taking security and greater flexibility on the sale of pledged assets than in certain other jurisdictions).

2. TRANSACTION COVERAGE

2.1. Impact of Transaction Coverage on Credit Exposure

The product exposures that are currently incorporated into most collateral agreements are:

- interest rate swaps and options;
- cross currency swaps;
- forward rate agreements;
- commodity derivatives;
- equity derivatives;
- bond options; and
- credit derivatives.

The specific product exposure types which an institution wishes to have included under the credit support arrangements should be clearly identified and agreed upon with the counterparty. Incorporating a broad range of products into a collateral agreement has a significant impact on the netted credit exposure amount. It is possible to exclude specific existing transactions from such arrangements (although this requires careful drafting). This will mean that residual unsecured credit risk will exist and should continue to be taken into account for exposure calculations. If a CSD is used, then your institution will also need to consider the impact on your ISDA Master Agreement when excluding certain transactions from the collateral arrangements.

The approach of partial collateralization should be used with caution. It may be difficult to coordinate partial collateralization with close-out netting for all transactions. A party using partial collateralization may find itself required to post collateral for the specified transactions when it has a net MTM exposure under an ISDA Master Agreement to its counterparty in respect of all transactions under that agreement.

2.2 Cross-Product Collateralization

In the context of privately negotiated derivatives transactions, the term “cross-product collateralization” can be used to mean cross collateralization of different types of derivatives within a given derivative portfolio. In these Guidelines, the term is intended to refer to the practice of integrating collateral support for derivative transactions with non-derivative transactions. There is a trend in the privately negotiated derivatives market towards collateralizing entire counterparty relationships rather than particular products. This approach promotes greater operational and capital efficiency. When seeking to collateralize an entire counterparty relationship while relying on one or more of the CSDs, care should be taken to ensure that any appropriate amendments have been made to the CSD(s). The CSDs may not, at the moment, be appropriately drafted to allow collateralization of an entire counterparty relationship. ISDA is currently addressing this issue. Recently, market participants have attempted to net credit exposure and collateralize the net MTM exposure for some of the following products:

- FX contracts, forwards and options;
- bond options;
- repurchase agreements and reverse repurchase agreements;
- debt and equity securities trades (spot and forward);
- emerging markets instruments (including securities, loans and hybrids);
- structured securities; and
- equity swaps.

Measuring cross-product credit exposure

Credit exposure can be measured in many different ways, and variables such as time, level of portfolio aggregation, and/or rates used may differ significantly. Measurement may even differ substantially within a single institution, where, for example, FX exposure is measured in near real time, but derivatives and securities exposure is measured once daily, or different sets of rates are used for the institution's offices in particular regions. In addition, the credit measurement models may have different levels of product aggregation, such as FX and FX options, or derivatives and securities.

As a result, it may be difficult to obtain a single figure for overall portfolio exposure across a number of products or locations with a particular counterparty. It may be helpful to evaluate how the exposure is measured and what significant measurement error might result before structuring the collateral arrangement. For example, an institution might wish to measure FX risk on a real time basis, derivatives and securities on a daily basis, and less liquid emerging markets on a weekly basis. This type of variation in measurement could either overstate or understate the overall cross-product credit risk with a counterparty and should be carefully evaluated to understand the effects. If the current methods of exposure measurement substantially understate the credit risk involved (perhaps because of suspected positive covariance between products), then the collateral arrangement can be structured appropriately (e.g., with a larger up front margin payment or more frequent collateral calls).

Institutions that foresee a large volume of cross-product business and find that credit risk is substantially under- or over-measured, may find it appropriate to develop or purchase systems that can measure the credit exposure of multi-product portfolios. It may also be possible to reduce risk through the increased use of real-time measurement systems.

In the FX market, typically, credit exposure is measured on a real time basis. Collateral calls may be made throughout the business day, with delivery of collateral to be same day or by the open of business the next day. If the counterparty fails to provide collateral, the non-defaulting counterparty can immediately liquidate any or all contracts. In addition, collateralized FX arrangements typically require substantial initial margin payments for each transaction (1%-5 % of the notional value is a frequently used measure).

Other markets where collateral is widely used tend to follow the same model as the FX market. Typically, agreements provide for quick provision of collateral and the right of the non-defaulting party to liquidate contracts immediately.

The CSDs were originally drafted to handle the types of MTM and collateral provision arrangements used between large counterparties in the derivatives market, and the drafters of the CSDs did not anticipate the need to structure collateral arrangements similar to those in other markets. As a result, some market participants have developed non-standard forms to accommodate these types of arrangements. ISDA is in the process of examining ways to modify the CSDs to handle other types of collateral arrangements.

2.3 Legal Considerations for Cross-Product Collateralization

If collateral is taken to cover a net exposure under a Master Agreement, you should be confident that the close-out netting provisions of the Master Agreement are enforceable upon the insolvency of your counterparty. ISDA has obtained opinions on the enforceability of the close-out netting provisions of the ISDA Master Agreement from thirty-four jurisdictions. These opinions confirm, in almost all cases that, with few material qualifications, close-out netting would be enforceable in the event of insolvency. It is important, however, for a party to satisfy itself when seeking to rely on a netting opinion, that it applies to the counterparty, that it covers the products it is seeking to net under the Master Agreement and that there are no material assumptions or qualifications in the opinion that significantly limit its scope.

The most relevant opinion, in relation to a counterparty, is an opinion given as to the law of the jurisdiction in which the counterparty is organized. This is where the primary insolvency proceeding in relation to the counterparty is most likely to take place. If the counterparty is a multibranch bank, you may wish to obtain opinions from each jurisdiction where the multibranch bank maintains a branch for the purposes of the Master Agreement. If, in relation to any branch, you cannot obtain a favorable opinion jurisdiction (a “Non-netting Jurisdiction”), you may wish to seek confirmation from local counsel in the home jurisdiction that the inclusion of the branch in the Non-netting Jurisdiction will not affect the enforceability of netting in the home jurisdiction.

When relying on a netting opinion obtained by ISDA, you should ensure that your counterparty is of a type covered by the opinion. While the ISDA netting opinions typically cover ordinary corporations and banks, they do not always cover more specialized entities such as insurance companies, partnerships and other entities, which may be subject to a separate insolvency regime in a particular country (for example, for U.S.-incorporated insurance companies, the relevant insolvency regime will be that of the State of incorporation of the relevant company).

Finally, you should ensure that a netting opinion on which you intend to rely covers all of the product-types you wish to include within the scope of the Master Agreement.

2.4 Netting Provisions Across Legal Jurisdictions

The products listed in 2.1 above are sometimes defined differently (if at all) under the netting or relevant laws of different legal jurisdictions. These differences may have important consequences for measuring the credit exposure to be collateralized. In order to secure the net exposure under a master netting agreement, careful legal analysis is

generally necessary to determine what types of products may be netted against each other under a master netting agreement.

Several financial institutions have developed matrices of jurisdictions and products to help summarize key information concerning cross-product netting. This tool can help credit and legal staff evaluate the risk involved in a particular jurisdiction when cross-product netting under a collateral agreement is contemplated.

2.5 Netting and Cross-Product Collateralization

The collateral arrangement for a Master Agreement covers the net exposure after close-out netting. It does not secure individual transactions. Cross-product collateralization of transactions documented under the same Master Agreement is therefore not normally problematic. In some (very few) jurisdictions, however, there is some concern about cross-product netting of different types of transaction documented under the same Master Agreement. It is therefore important to obtain the necessary legal comfort that the close-out netting provisions of the Master Agreement extend to all of the products your firm/institution wishes to include within the Master Agreement.

The risk of not ensuring the enforceability of cross-product netting under the Master Agreement is that it may create gross exposure in relation to the products excluded (or perhaps an overall gross exposure if the close-out netting fails completely as a result of the inclusion of certain products), and, as a result, cause a deficient collateral level.

3. DETERMINING ELIGIBLE COLLATERAL FOR THE COUNTERPARTY

3.1 Considerations for Selecting Appropriate Collateral

Selecting appropriate collateral will potentially give your firm/institution better protection against counterparty risks and may reduce your capital costs. Poorly selected collateral gives rise to unacceptable levels of price risk, liquidity risk, operational risk and legal uncertainty. It is also recognized that collateral is becoming an ever-scarcer resource as a wider and wider array of financial exposures are being collateralized. As a result, the range of eligible collateral is expanding as well.

The following criteria have often been used as a basis for determining collateral eligibility. Failure to satisfy one of these criteria will not necessarily mean that collateral is rejected. Rather, most shortcomings can be addressed through the application of stiffer haircut rates and, in some cases, the enforcement of maximum concentration limits. A haircut rate is the valuation percentage used to calculate the risk-adjusted value of a collateral asset.

Liquidity

There are several ways to measure objectively an issue's liquidity. The best methods will vary according to the issue type. An up-front assessment of liquidity would probably consider the credit rating, currency, issue size and the frequency of price updates. If a price ceases to be available for a particular item of collateral, this suggests that there has

been a significant downturn in the liquidity of that asset. It is advisable to establish a liquidity threshold below which an item of collateral is valued at zero. It is appropriate to reassess these parameters periodically while your institution is holding the collateral.

Volatility

Instruments with low price volatility are the most favored. Ultimately, if highly volatile instruments are to be accepted, they should be subject to lower concentration limits and higher haircut rates. The haircut computation methodology suggested in the following section ensures that price volatility is factored into the haircut. When establishing initial margin levels or haircuts, it is important to remember that operational risk is generated by the delay between the point at which a call for margin is made and the point at which the collateral is delivered. In practice, the collateral call will be made on day T while delivery of the collateral will not take place until T plus one day. During periods of extreme market volatility, this one day lag creates operational risk. For the same reason, it is inadvisable to accept collateral that is subject to long settlement periods. Initial margin levels and haircuts should be established at levels that take account of this risk.

Collateral Quality (Credit Rating)

For all bonds, a minimum acceptable credit rating is often stipulated. Any bonds that are not rated by an agreed rating agency (e.g. S&P or Moody's) could undergo a deemed rating process. In such a process, you may review ratings accorded by an agreed rating agency to other (senior unsecured) issues by the same issuer, and accord a similar deemed rating if the issue in question is not subordinated. If the issue being assessed is subordinated in any way, the deemed rating could be two to three modifiers lower than the rated issue (for example, two modifiers lower for issuers rated AA (or equivalent) and above, and three modifiers lower for the others). It is advisable to structure collateral documentation to permit additional calls to be made in the event that a debt security accepted as collateral falls below its agreed credit rating after delivery.

An alternative source is your institution's credit department. If credit decisions are based on internal risk ratings, they should be valid enough to provide deemed ratings for collateral. However, this may require sharing of internal credit ratings with your counterparty, which has confidentiality implications. Therefore, the transparency and/or confidentiality of the use of internal credit ratings needs to be agreed upon up-front between counterparties.

For equities, collateral quality is more difficult to gauge, but listing on the major exchanges, and especially in the prime indices (such as the S&P500, the FTSE100, DAX30, CAC40 or Nikkei 225), are generally viewed as indicating greater liquidity.

Instrument Tenor (Time Remaining to Maturity)

Collateral is often grouped in tenor buckets, with longer tenors leading to higher haircuts. It is generally understood among practitioners that tenor should be measured as residual maturity rather than original maturity (residual maturity being maturity as measured from today; original maturity being maturity as measured from the issue date). Some existing collateral agreements still refer to original maturity, although quite often the parties agree verbally between themselves that they will measure residual maturity instead, suggesting a need to amend the agreement. However, in a dispute such an oral arrangement may not

be enforceable and the points made in section 4.1 of Chapter One above (Documenting the Collateralized Relationship) with regard to the prompt documentation of changes in relationships and market practices are of equal relevance here.

Avoid Strong Correlation to Exposure

There are some types of collateral that, given the underlying exposure, are not appropriate because their value will always decrease as the exposure increases. Such collateral will often be unacceptable even if it qualifies under all other acceptability criteria.

In limited circumstances, strong correlation may be advantageous: the collateral chosen may specifically offset the liability because of its strong correlation to the liability, creating a covered trade. For instance, in the case of equities securing exposure arising from a call option bought on those same equities, the market risk approaches zero (especially once the option is deep in-the-money) because any increase in the exposure is balanced by a corresponding rise in the market value of the collateral.

Avoid Positive Correlation to Collateral Giver

Any collateral whose value correlates directly and positively to the collateral giver's credit standing is usually not acceptable. Specifically, securities issued by the collateral giver, or any related entity that is part of its family group, are normally not acceptable as collateral. Be aware too of other positive correlations between the collateral giver and the collateral that is offered. For example, accepting securities in markets where the collateral giver is known to have large positions may severely impair the collateral's value at the same time as the collateral giver's financial strength is severely weakened if there is a downturn in the market.

After the determinations are completed, the appropriate legal document should be selected. For large numbers of products, or groups of products that include derivatives, the ISDA Master Agreement together with a CSD may be preferred, with modifications if necessary. Please refer further to section 4 of this Chapter, entitled "Documenting the Collateralized Relationship", for a more detailed discussion.

3.2 Considerations in Calculating Haircut Rates

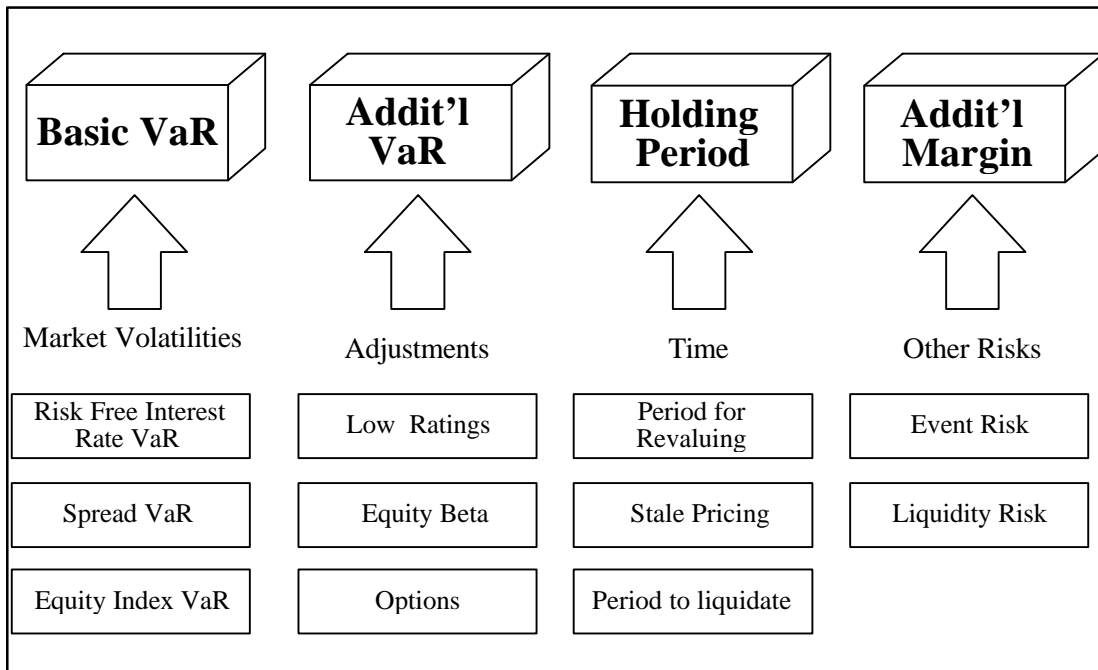
Haircut rates for securities are designed to cover loss of value due to the worst expected price move over the holding period, as well as costs likely to be incurred in liquidating the assets (such as commissions and taxes). Price moves, of course, can be positive as well as negative, but haircuts are used to cover only the worst expected aggregate negative price move over the holding period. Haircuts are most often expressed as a percentage which is deducted from the market value of each collateral asset type. It is the sum of the collateral values after application of the haircuts which has to be sufficient to cover the exposure that is being secured. The rarer practice of viewing haircuts (or margins) as a percentage which is added to the exposure is not as practicable where collateral portfolios consist of different asset types requiring varying haircuts. Haircuts are based on the quality of the assets being used as collateral, and not on the credit risk of the collateral giver. Consequently, haircuts are not adjusted for the credit risk of the collateral giver. Other measures such as maximum margin limits, cascading thresholds and initial margin can help increase protection against counterparty risks should this be deemed necessary.

Selecting Appropriate Haircut Methodology

The haircuts agreed between counterparties are subject to negotiation. Such negotiations are often driven by wider relationship considerations. It is important to use an accepted methodology as a starting point, and be able to measure or estimate specific parameters, which can include agreed statistical confidence levels, in order to calculate the agreed haircuts. Having an undisputed formula allows institutions to re-set haircuts when collateral price valuations change, to compute new haircuts easily for new types of collateral using the same conventions and to revise haircuts by mutually agreeing to change confidence levels when market conditions change.

Instrument Haircut Variables

The generally accepted methodology for calculating haircuts is based on some estimation, either statistically- or dynamically-calculated, that considers what a piece of collateral might be worth if the collateral holder ever had to sell it. Below are explanations of the different variables that may be used in calculating haircuts. The following diagram illustrates how to apply these variables together to arrive at the final result. Please refer also to the discussion of cross-currency haircuts below.



Basic Value at Risk (VaR)

This measurement is a basic statement of the price volatility for any debt or equity instrument. In regulatory capital/risk management terminology, basic VaR addresses general market risk. It is usually defined in terms of statistical confidence levels, e.g. a 99% confidence that the price of the asset will not move by more than the calculated or estimated percentage over a defined period. The basic VaR may need to be supplemented for some instruments but it is the starting point for most haircut calculations and is normally comprised of one of the following components. Under the heading of basic VaR, one must consider the issues of risk-free interest rate VaR, spread VaR and equity index VaR:

- ***Risk-Free Interest Rate VaR***
This captures the volatility of a credit-risk-free yield curve and is used for all debt instruments, including sovereign and corporate debt. It is not used for equities.
- ***Spread VaR***
This measurement supplements the credit-risk-free interest rate VaR for debt instruments, capturing the spread between corporate and sovereign yield curves. It is used for corporate debt and sovereign debt issued in foreign currencies. The only type of debt not requiring spread VaR is domestic currency sovereign debt.
- ***Index Equity VaR***
This estimates the volatility of a market index for equities and depository receipts. It does not represent the volatility of an individual equity, but that of a well-diversified portfolio of equities in one country's market.

Additional VaR

Additional VaR provides the opportunity to adjust the Basic VaR above to account for additional shortcomings present in certain debt instruments. In regulatory capital/risk management terminology, additional VaR addresses specific risk. Under the heading of additional VaR, one must consider the issues of low rated debt, the application of an equity Beta and the additional volatility associated with options:

- ***Low ratings***
Low-rated debt, such as that rated below investment grade or from emerging markets, might warrant an additional haircut, perhaps only in certain market situations if the spread VaR has already made some allowance for the higher volatility of these assets.
- ***Equity Beta***
In addition to an overall equity index VaR, it is necessary to multiply by the particular Beta of an equity to account for its specific extra price volatility versus that of the index. This step may be omitted if the collateral giver provides a reasonably well diversified portfolio of equities, which is often taken to mean more than ten different equities per market.
- ***Options***
Extra volatility arising from the option component of certain debt instruments may also call for an additional VaR.

These VaR estimations can either be dynamically observed and measured or can be approximated to general percentages per broad instrument type, in which case, the calculations are more static. The Basic VaR can be measured and updated regularly by using price volatility data, such as that made available by Riskmetrics™. The additional types of VaR will usually require some more specific instrument analysis. Whatever the method or frequency of calculation or estimation, the essential element is to include an estimate of the basic price volatility of the collateral asset.

Holding Period

The holding period should span the maximum time lapse possible between last having the correct amount of collateral and actually being able to liquidate your collateral holding in the event of default.

It needs to take into account the frequency of pricing revaluation. For instance, if collateral valuation is only carried out once a week, most practitioners would add five business days (or six, if they use prior day's closing prices) to the holding period. For daily collateral valuation, most still add one day to the holding period to account for the fact that prices used are prior day's closing prices, not today's. The matters to be taken into account when calculating your holding period include:

- pricing update frequency;
- age of prices obtained;
- longest time between collateral valuations;
- frequency of margin calls;
- period to post margin (NB: factor in settlement delays in the local markets);
- time to discover the counterparty has not posted margin;
- time to contact counterparty and notify them that they have missed a margin call;
- grace period before declaring non-performance;
- time to decide to liquidate (depends on relationship considerations);
- time to gain the legal right to liquidate; and
- time to actually dispose of the assets.

Some practitioners take the view that some of these steps will happen concurrently, and they reduce their holding periods to reflect that some activities will overlap in time. With a reverse securities repurchase ("reverse repo") structure (or using the title transfer approach described above), the holding period is reduced because there is no need to gain the legal right to liquidate.

Haircuts need to be computed for the appropriate holding period. A traditional holding period is one month, although market practice seems to be moving towards ten business days in some areas. If the holding period is one month, and one month volatilities are used, no conversion is needed. If a recalculation of volatility is needed for a different

holding period, the statistical formula is to multiply the volatility by the square root of T, where T is the time factor.

For example:

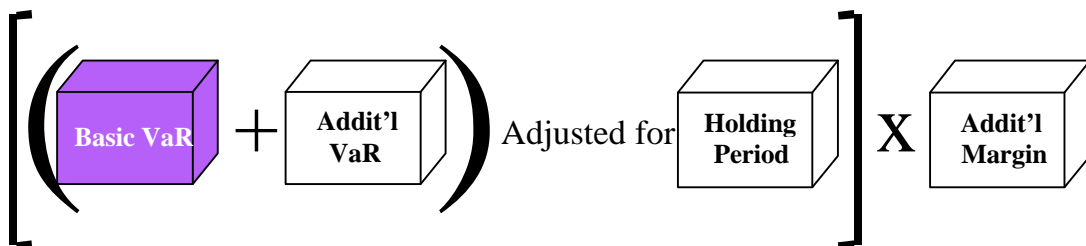
If the daily volatility is 2%, then the one month volatility is approximately the product of 2% X sq. root of 21 (number of business days in a typical month),
 = 2% X 4.583
 = 9.166%

If you have a 20% annual volatility, then the one month volatility is approximately 20% X sq. root of (1/12),
 = 20% X sq. root of 0.08333,
 = 20% X 0.289,
 = 5.78%

Additional Margin

An additional margin may be added to the resulting haircut to cover for non-market-related risks, including the following:

- ***Event Risk***
 Political risk (for emerging market collateral) and the risk of the issuer of the collateral defaulting can be taken into account here, incorporating (mutually agreed) credit ratings of the collateral. As soon as any collateral goes into default or falls below a mutually agreed minimum credit rating, it should be given zero value immediately;
- ***Liquidity Risk***
 Depending on the assessment made of the liquidity of the collateral, an extra haircut can be made to allow for the fact that the collateral is difficult to sell upon liquidation and the realized price may be much lower than the bid price observed for basic collateral valuation; and
- ***Instrument Haircut Calculation***
 Once you have computed each of the main components, they fit into the final haircut calculation as follows:



Cross-Currency Haircuts

In addition to the haircut calculation, cross-currency haircuts are often added whenever there is a mismatch between the currency of the exposure and the currency in which the collateral is denominated. For cash collateral where there is a similar currency mismatch,

only one set of haircuts rates are applicable. As for VaR calculations they can either be set statistically as flat percentages or else computed dynamically using cross-currency volatilities (e.g. using RiskmetricsTM data). They too need to be adjusted in the usual way for the holding period.

Collateral Groups and Classes

Logic should underpin decisions about collateral eligibility and how to calculate the required haircuts. It is easiest to manage large and varied collateral portfolios if collateral assets requiring the same concentration limits or haircut treatment are grouped together. For European counterparties, the way that collateral types are grouped should also help streamline the Capital Adequacy Directive (“CAD”) reporting functions. CAD stipulates that collateral assets be broken down into four different qualifying categories: cash collateral (100% qualifying); AAA rated government bonds (100% qualifying); 80% qualifying securities; and other securities that do not qualify. Most practitioners use this as their starting point, but soon find that a wider range of collateral classes plus the ability to break them down further is of help.

3.3 Collateral Diversification and Optimization

A well diversified collateral portfolio is better protected against general market downturns and usually gives the collateral holder the confidence to agree to a wider range of collateral quality and smaller haircuts. If an institution decides not to enforce diversification from its own internal credit point of view, it should be noted that the institution may still be required by regulators to accept properly diversified collateral. Collateral issued by your counterparty or one of its subsidiaries should be excluded.

The amount of collateral accepted from one issuer may be restricted in proportion to the issuer’s market capitalization, so that if liquidation is necessary, the size of the collateral position being sold does not put downward price pressure in the market or excessively extend the sell-off of the liquidity period. Maximum single issuer concentration limits are best expressed as a percentage of the market capitalization of the issuer.

If an institution’s collateral portfolio is not well diversified, limiting collateral exposure beyond OECD government and supranational securities to a maximum percentage of the entire collateral portfolio, and exposure to any one industry or country in the same way, may be helpful. If a portfolio is so small as to make the application of other concentration limits difficult, institutions should consider asking that it consist entirely of OECD government paper. There are haircut implications to consider when diversification is compromised. For example, consider the potential results if the collateral portfolio consisted of only one or two particular equities listed on a major index, and a firm chooses to use the average volatility for the index as a whole as an input in computing the haircut. The actual volatilities for those two equities may exceed the average volatility for the index, so the haircut will not cover potential price movements. Unless a range of equities representative of the index is selected, the index’s average volatility should be supplemented, or else the actual volatilities of the equities in question (obtainable from various pricing sources) should be used to compute the haircuts.

3.4 Legal Issues

For collateral to be of value to the collateral taker, the taker should accept collateral where a high degree of legal certainty concerning rights to the collateral in the case of client or counterparty default exists. Legal counsel can give advice on how a security interest in the collateral may be perfected, and indicate the steps that should be taken to achieve this (although giving an unqualified opinion on perfection can, in practice, be quite difficult for various reasons). Ideally, these steps should be taken before collateral assets are received or given value. In the event collateral must be liquidated, the legal process involved is best understood in advance and worked into the holding period. Alternatively, you can operate under an outright transfer mechanism. One advantage of this structure is that perfection risk is generally reduced or eliminated (however, there may be disadvantages to this approach, as discussed in Section 1.4 of this Chapter).

4. DOCUMENTING THE COLLATERALIZED RELATIONSHIP

4.1 Considerations in Selecting Appropriate Documentation

One of the keys to enforcing an interest in collateral, when necessary, is the existence of appropriate documentation of the collateral arrangement. What is appropriate will depend upon the nature of the counterparties, the type of underlying transaction, the operational capabilities of the parties, etc., but it can be valuable to use industry standard forms because they can offer objectivity, consistency and a body of judicial and operational experience and can shorten negotiation because they are more readily accepted. The CSDs take the form of an annex to the ISDA Master Agreement (except the English Deed which, as explained below, is a stand-alone document) each based on a different body of law, or method of taking collateral, from which parties may choose.

Signing standard forms will not usually be sufficient by itself to give you a good interest in collateral. You will need to take legal advice concerning the best way to hold the collateral and whether any other steps, such as filings or registrations, need to be made in order to defeat claims to the collateral by third parties.

4.2 Form of Documentation

CSDs

ISDA has, to date, published four standard forms of Credit Support Document:

- the ISDA Credit Support Annex subject to New York law (the “New York Annex”), reflecting the pledge approach;
- the ISDA Credit Support Deed subject to English law (the “English Deed”), reflecting the pledge approach;
- the ISDA Credit Support Annex subject to English law (the “English Annex”), reflecting the title transfer approach; and

- The ISDA Credit Support Annex subject to Japanese law (the “Japanese Annex”), which includes two forms of collateral arrangement under Japanese law, one reflecting the pledge approach, the other reflecting the title transfer approach (referred to as “loan collateral” under Japanese law).

Each of these forms is drafted as an annex to the Schedule to the ISDA Master Agreement except for the English Deed, which is a stand-alone document. The English Deed is a standalone document for purely technical reasons and is, in terms of form and content, otherwise very similar to the other CSDs.

Determining the Appropriate Form

There are a number of factors which parties may wish to consider in determining the appropriate CSD, the relative importance of which will depend on the particular case. These factors include:

- *Governing law*: you may wish, for practical reasons, to use a CSD governed by the same law as the related Master Agreement. It is not, however, necessarily impossible to have the CSD governed by a different governing law than that governing the Master Agreement, but this should be confirmed in specific cases by your legal advisers.
- *Nature and location of collateral*: broadly speaking, all of the CSDs cover the same type of collateral, namely, cash and government securities (and each can be relatively easily expanded to cover other types of securities). The New York Annex, however, is designed for use only with U.S. dollar cash and securities. There is no currency conversion mechanism in the New York Annex. Also, the New York Annex assumes one day settlement periods, which is appropriate for U.S. Treasury securities but not, for example, for most European government securities. Those who use the New York Annex more broadly adjust for these factors. The Japanese Annex is similarly limited to Japanese Yen cash deposits and securities. The English Deed and English Annex are drafted to cover cash and securities in a variety of currencies as well as in settlement systems with different customary settlement times. They are each primarily drafted with cash in any currency and European government securities in mind.
- *Use of collateral*: it is often important, commercially, for the collateral taker to have relatively unrestricted use of securities received as collateral until they must be returned to the collateral giver. This unrestricted use includes the ability to sell them to a third party in the market, free and clear of any interest of the collateral giver. Other uses would include lending the securities or selling them under a securities repurchase (“repo”) agreement or rehypothecating them (that is, pledging them - note that the term “rehypothecation” is often used commercially, in this context, to mean any use of the collateral by the taker. If the taker needs unrestricted use of the collateral, the taker should not use the English Deed, under which the taker is not permitted to use the collateral. The taker may instead prefer to use the New York Annex, the English Annex or the Japanese Annex.

- *Enforceability of CSD*: in deciding which form is most appropriate, parties will also need to consider whether the particular CSD chosen would be enforceable in the counterparty's home jurisdiction and in any other relevant jurisdiction.
- *Tax considerations*: tax considerations may affect the choice of CSD. As a general matter, tax is more likely to be of concern in relation to the title transfer approach reflected in the English Annex, although the UK taxation issues have largely been eliminated during the course of bilateral discussions between ISDA and the UK Inland Revenue, summaries of which are available from ISDA. However, tax issues may arise when the English Annex is used in other tax jurisdictions. See the User's Guide to the 1995 ISDA Credit Support Documents under English Law for further discussion of these issues. In general, parties should consult with their legal advisors regarding any tax considerations. For a discussion of taxation issues related to the taking of collateral in the United Kingdom, see also Appendix 2 to these Guidelines.
- *Negative pledges*: if your counterparty has entered into a negative pledge that would prohibit it from granting security, you might be able to put in place an English Annex, based on title transfer, if the negative pledge does not also cover set-off, netting or similar arrangements. The precise wording of the negative pledge should be considered carefully, but parties in the past have chosen to use the English Annex for precisely this reason.
- *Bankruptcy freezes*: CSDs reflecting the pledge or security interest approach may be caught by a bankruptcy stay or freeze (although they are unlikely to be so caught where the pledge is made by a UK or U.S. corporate/bank). The English and Japanese Annexes, reflecting the title transfer approach, might, however, not be caught by such a stay or freeze. For example, the English Annex would not be caught by the freeze imposed by sections 10 and 11 of the UK Insolvency Act 1986 in the event of an administration, a form of reorganization proceeding in the UK. In insolvency proceedings for a U.S. corporation or a U.S. bank, CSDs which are part of an ISDA Master Agreement generally are not subject to an automatic stay or other sort of bankruptcy stay.

The foregoing list is not necessarily exhaustive, but reflects various considerations an institution may wish to take into account when deciding which CSD to use with a particular counterparty.

4.3 Legal Issues

Creation and Perfection of Security

How does one ensure the validity of the collateral arrangement chosen against a liquidator, bankruptcy trustee or receiver of one's counterparty and against third parties? Where the pledge approach has been chosen, one should ensure that the pledge has been validly created under its governing law (which in many cases will be the law the parties have chosen to govern the pledge document) and has been validly perfected, if necessary, in

(A) each jurisdiction where collateral is located and (B) each jurisdiction where the counterparty is located for purposes of the relevant Master Agreement.

In practice, valid creation of a pledge is not difficult, assuming the counterparty has the necessary legal power (capacity) and authority to grant security. The precise formalities will, of course, depend on the governing law of the security document and on certain other factors as well, including the nature of the relevant collateral. Essentially, though, it involves not much more than the execution of a properly drafted document such as the New York Annex or the English Deed. Perfection is a term that encompasses any of the actions that may be necessary to ensure the formal validity and (often) the priority of a pledge over the interests of third parties. Examples of such actions include: having “control” of the collateral; registration of the pledge or filing of a statutory notice with a relevant government official; notification of the pledge to a custodian holding the relevant collateral; transfer of collateral in the form of book-entry securities to a special “pledged account”; and delivery of possession of collateral to the secured party. Whether or not any of these or any other means of perfection is required in a particular case depends, as noted above, on the nature and location of the collateral and nature and location of the counterparty.

As to the nature of the collateral, the perfection requirements applicable to securities will often be different from the perfection requirements applicable to cash collateral. Even in relation to securities, the perfection requirements may vary according to whether the securities are: (a) debt or equity; (b) bearer or registered; (c) physical form or book-entry; and/or (d) held directly with a single custodian or through a chain of intermediary custodians and clearing systems.

As to the location of the collateral, this can raise difficult conflict of laws questions, particularly in relation to securities held in book-entry form through a chain of intermediaries. A single security may, for example, be deemed to be located where the issuer of the security has its head office or, if the security is registered, where the relevant register is kept or, if in physical form, where the physical securities are located or, if held through a chain of intermediaries, where the intermediary closest to the collateral giver or taker is located. In practice, legal advisers can help to work out a matrix of rules for determining location of different types of collateral, and can then investigate what perfection requirements, if any, apply.

In the U.S., the conflict of laws position has been considerably simplified in most U.S. States (including New York) by the entry into law of revised Article 8 of the Uniform Commercial Code. Revised Article 8 provides, in effect, that the location of a party's interest in securities held indirectly is the place of location of the financial intermediary with whom the party holds its account for those securities.

In May 1998, the European Union (the “EU”) adopted a directive on settlement finality in payment and securities settlement systems. Member states of the EU are required to implement the directive by 11th December 1999. Article 9 of the directive establishes a conflict of laws rule for EU member states as to the location of securities held indirectly that has a similar effect in principle to the revised Article 8 position in the United States. As to the nature and location of the counterparty, you should bear in mind the possibility

that perfection formalities (typically, where relevant, some form of registration of the security interest) may be required in its home jurisdiction and/or its jurisdiction of location.

For example, in relation to an English counterparty, if it is organized under the UK Companies Acts, a pledge granted by the English counterparty may require registration (if it has certain specified characteristics) with the UK Registrar of Companies. Under the same statute, a foreign counterparty with an established place of business in England or Wales will also need to register certain types of pledge if any of the collateral is located in England or Wales.

Where you have chosen the title transfer approach, you should be sure that the arrangement will be enforced as written and that it will not be re-characterized as a form of pledge.

Status of Collateral Opinion Project

ISDA has requested opinions from local counsel in various jurisdictions (Belgium, Cayman Islands, England, France, Germany, Hong Kong, Indonesia, Japan, Luxembourg, Malaysia, Singapore, South Korea, Switzerland, Taiwan, Thailand and the United States (New York), as to the enforceability of the New York Annex, the English Deed and the English Annex in the case of the insolvency of the collateral giver. Please note that the first round of opinions does not cover the Japanese Annex.

The instruction letter to local counsel requested that counsel first consider the insolvency of a counterparty organized in the local jurisdiction, including creation and perfection issues, and then posed a series of questions regarding the local jurisdiction as the jurisdiction of location of collateral. Local counsel were therefore requested to consider various conflict of laws questions, including the enforceability locally of foreign law pledge and/or title transfer documents.

The first four opinions completed, for England, New York, Singapore and the Cayman Islands, were published by ISDA in June 1998. The next four, Belgium, Japan, Luxembourg and Switzerland have been completed and are to be published by the end of October 1998.

Regarding the eight opinions completed, a few general conclusions can be drawn. Some formalities are required in all of these countries to ensure the validity of a pledge of securities or cash, but these formalities are largely straightforward, and therefore should not cause undue concern in practice. Generally speaking, the countries surveyed either do not permit the collateral taker to deal freely with collateral securities it holds (to sell, lend, repo or otherwise use the securities) or do permit such use lost and replaced by a right of set-off. Enforcement of a security interest is straightforward in the countries surveyed, but in all cases other than the Cayman Islands, enforcement may be subject to a freeze or stay upon the insolvency of the collateral giver. Finally, the survey shows that in six of the eight countries surveyed, there is no material risk that a title transfer arrangement, such as that contemplated by the English Annex, would be recharacterized as a pledge. There is some risk of recharacterisation in Luxembourg and in New York, but both opinions indicate that the risk is relatively low.

Cross-Product Documentation Forms

To date, the ISDA Master Agreement has been the primary legal agreement used to effect cross-product netting in the market, and the CSDs have been the primary documents used to collateralize the resulting net credit exposure. In the FX markets, many participants have used IFEMA or ICOM Master Agreement, or a variant, combined with a Margin Supplement to collateralize foreign exchange trading. In the repurchase agreement markets, the PSA Master Repurchase Agreement or the PSA/ISMA Global Master Repurchase Agreement have been used to collateralize trading. Some counterparties have also used a form of a PSA Master Agreement to collateralize over-the-counter options on US government securities.

Please refer to the next section for further documentation related issues.

4.4 Structuring the Documentation

As discussed above, each of the CSDs, other than the English Deed, is an annex to the Schedule to an ISDA Master Agreement. The English Deed is a stand-alone document for reasons mentioned above. Otherwise, in overall structure, each of the four CSDs is similar. Each CSD has provisions dealing with the following:

- how collateral calls and collateral returns are to be calculated;
- the mechanics and timing of transfers;
- the method and timing of valuations made by the collateral valuation agent;
- substitutions or exchanges of collateral;
- resolution of disputes regarding valuation of collateral or exposure;
- enforcement on default;
- representations and warranties;
- allocation of expenses relating to the collateral arrangement;
- default interest; and
- rehypothecation.

These provisions are more fully described in User's Guides published by ISDA in relation to each CSD.

Each of the forms also includes a final Paragraph, comparable to the Schedule to the ISDA Master Agreement, which the parties must complete in order to give effect to the collateral arrangement. In this Paragraph the parties are required to specify the relevant types of eligible collateral, the relevant thresholds, independent amounts and minimum

transfer amounts, the rounding convention, the interest rate for cash collateral and various matters relating to valuation.

There are, of course, various technical legal differences between the forms based on differences in the underlying governing law and the theory on which the document is based (in essence either a pledge or title transfer). For further details on the CSDs, see the relevant User's Guides.

CHAPTER THREE

IMPLEMENTING THE COLLATERALIZED RELATIONSHIP

1. COLLATERAL MANAGEMENT

Although collateral management may be relatively uncomplicated for a relationship between two parties under one agreement for one line of business, in practice, it may become more complicated. A firm may be doing business with the same counterparty out of multiple entities in different jurisdictions for tax, accounting, regulatory or other reasons. As a result, the following issues may arise:

- the counterparty initiates multiple calls for collateral to secure various exposures;
- likewise, a call for collateral may be initiated by one entity of your organization while another entity is returning collateral to the same counterparty. At some point, both parties run the risk of overcollateralizing on a net basis; and
- your relations with one counterparty may be governed by multiple agreements with different terms covering different products or ranges of products, which may overlap.

Monitoring collateral positions and tracking collateral movements requires both parties to have systems to handle collateral. In any case, there is the challenge of automating the collateral process by using computers. Additional administrative burdens come in the form of monitoring or tracking the securities that are the subject of a collateral agreement, performing daily MTM calculations and handling margin calls.

2. MECHANICS OF ESTABLISHING A COLLATERAL ACCOUNT

2.1 Establishing a Custodial Arrangement

At the inception of a collateral program, an institution would do well to assess its custodial capabilities and established safekeeping services. In general, market participants will elect one custodial arrangement for all of their collateralized transactions depending on the firm's capabilities. When a firm has an existing internal custody service, benefits include cost efficiencies, a high degree of comfort for the secured party, and ease of rehypothecation if permitted. However, there may be instances when a counterparty requests that its collateral be held by a third party agent in order to protect against insolvency and insure the security of the collateral. If a third party custodian is used, it is

wise to establish internal guidelines in advance, in consultation with legal and credit departments, on the minimum credit rating acceptable for a third party custodian. The use of third party custodians generates additional credit considerations since there is the possibility of the custodian's insolvency or delay in delivery upon default of one of the counterparties. From the point of view of legal risk, it is also advisable to ascertain the jurisdiction of incorporation of the third party custodian or the jurisdiction in which its principal custodial activities are conducted.

2.2 Establishing Collateral Custody Accounts

Collateral custody arrangements should be documented and the proper internal authorizations should be completed before negotiating custody terms into a collateral agreement. A collateral custody account should be flagged as such. The improper establishment and documentation of custody arrangements may result in pledged assets posting to the secured party's balance sheet, which may be undesirable. Upon reviewing a new CSD a collateral manager must be able to ascertain whether collateral will be delivered to its established custodian or to the third party agent. If a third party agent is specified, the collateral manager must ensure that the agent meets the minimum credit rating and that the credit rating is monitored during the life of the agreement. Monitoring the credit rating of the third party custodian will ensure that credit downgrades are reported to the credit department and that the custodian continues to meet the CSD requirements. Other considerations for ensuring the operational viability of a custody arrangement and the establishment of proper controls are described below.

Both parties and/or the custodian should be in a position to re-value the collateral. In addition, the secured party must have the level of operational control over the assets that is required for a pledge to be enforceable vis-a-vis third parties and (for institutions subject to the CAD) by the applicable CAD requirements if you are seeking capital adequacy relief.

Upon the establishment of a collateral custody account, it should be decided whether collateral will be segregated or pooled together. Some counterparties prefer to have their assets pledged as collateral held in a segregated account and not commingled with other collateral. The feasibility and operational limitations in maintaining segregated accounts should be investigated.

Costs

The cost of the custody and safekeeping of collateral can be significant and, frequent substitutions and pledging of exotic securities will increase costs. In bilateral margining agreements, each counterparty absorbs the cost of holding the other's collateral, and these costs are generally understood to cancel each other out since the collateral terms will often be the same for either party. In unilateral agreements where there are frequent substitutions and/or exotic collateral is accepted, it may be appropriate to charge custody costs to the collateral giver. However, charging custody costs back to the collateral giver is not general market practice in all jurisdictions.

2.3 Establishing Procedures for Collateral Movements

Procedures for the release, return and substitution of collateral should be established and documented. Depending on the level of automation, notices to the custodian and customer may range from system generated messages to written requests. All collateral movements should be monitored and documented.

An activity report, whether on-line or system-generated should be supplied by the custodian. Documenting collateral movements will:

- ensure timely movement of collateral;
- provide a reconciliation tool for tracking collateral positions and ensuring the accuracy of security information; and
- fulfill internal audit/compliance requirements.

Appropriate staff should be designated to authorize the release of collateral. Such authorizations should always be given with reference to the level of collateral required against the currency exposure to make sure that no shortfall would result from the release. All authorization notices should be verified by a designated staff member for accuracy of collateral information, as well as ensuring that exposure is offset properly. Segregation of duties within the collateral unit, is a critical control to minimize operational errors.

3. VALUATION OF COLLATERAL

The principles for the valuation of collateral are the same as those for valuations in standard cases such as client reporting by the operations department. Obtaining accurate and current collateral price valuations is the starting point for calculating the ultimate value that the collateral taker should ascribe to any collateral that is posted. Valuations can be automated or manual but should be available in a controlled accurate and timely manner. Once collateral valuations are determined, haircuts are applied to the price valuations of the collateral and accrued interest is included in the market value.

3.1 Valuation Methodology for Collateral Assets

The calculation agent for the valuation of the assets which are held as collateral should be defined in the ISDA CSD along with the calculation agent for the collateralized transactions themselves. The choice is either Party A, Party B, both, or a third party.

The market value of collateral has three components: market price, haircut rate, and accrued interest.

Market Price

While collateralized transactions may be valued by each party to an agreement, the pricing of liquid assets such as US government Treasuries or FTSE equities is typically determined by current market prices. It is preferable for pricing sources to be independent, electronic, from a widely recognized source, and agreed in advance between the parties. Reuters, Telerate, Bloomberg and Extel are all frequently used sources. Bid prices are generally used since they reflect the market price at which there is a buyer for the collateral. However, if your operational set-up precludes using the bid price the closest price available may be the mid-market price. Therefore, to the extent that such a price is available, it is typical to value collateral assets using a public source and where possible even agree between the parties the actual page which will be used to determine the price. This means that both parties can verify the price which the other has used easily and independently.

In the case where illiquid assets such as lower-rated corporate bonds are held as collateral, prices may not be available from a public source. In this instance, it is possible to obtain a valuation of the asset by polling three independent dealers. This prevents the deliberate mis-statement of the value of collateral assets and also works to avoid inaccurate pricing.

Haircut Rates

The haircuts agreed between counterparties are subject to negotiation, and such negotiations are often driven by wider relationship considerations. Haircuts are designed to cover the worst expected price move over the holding period, as well as expected costs incurred in liquidating the assets (such as commissions and taxes when selling securities). Price moves, of course, can be positive as well as negative, but haircuts are used to cover the worst expected aggregate negative price move over the holding period. Haircuts are based on the quality of the assets being issued as collateral, and not on the credit risk of the collateral giver. Consequently, haircuts are not adjusted for the credit risk of the collateral giver. Other measures such as maximum margin limits, cascading thresholds, initial margin, and independent amounts will increase protection against counterparty risks should this be deemed necessary. Haircuts are most often expressed as a percentage that is deducted from the market value of each collateral asset type. The practice of viewing haircuts (or margins) as a percentage which is added to the exposure is not as practicable where collateral portfolios consist of different asset types requiring varying haircuts.

In addition to the above mentioned haircut rate calculation, cross-currency haircuts are often added whenever there is a mismatch between the currency of the exposure and the currency in which the collateral is denominated. For cash collateral where there is a similar currency mismatch, they are the only haircuts applicable. VaR calculations can either be set statistically as flat percentages or else computed dynamically using cross-currency volatilities (e.g., using RiskmetricsTM data). They too need to be adjusted in the usual way for the holding period.

In summary, the sum of the collateral values after application of the haircuts plus the accrued interest (if applicable) has to be sufficient to cover the exposure that is being secured.

Accrued Interest

Most collateral practitioners agree with their counterparty in advance that the value of accrued interest will be added to the MTM of the collateral portfolio. There is extra exposure for the collateral giver if this does not happen (he has pledged more collateral than is recognized). If you opt for including accrued interest, then you should be able to agree in advance on how this will be calculated and added to the portfolio value. For some institutions, accrued interest with a settlement date of today is considered to be realized by the close of that business day. For other institutions, the accrued interest would not be realized until the start of the next business day. Both of these methodologies are accepted practice. For large portfolios with billion dollar notionals, these differences can be substantial and can cause large aggregate valuation differences.

3.2 Frequency and Timing of Valuation

Current indications from central banks suggest that, in order to qualify for capital relief, collateral (and credit exposures) will need to be marked-to-market daily. Also, daily re-pricing is a way of checking on liquidity; collateral for which daily prices are available through daily electronic pricing feeds is considered most liquid. Should daily re-pricing not be possible, decide on your tolerance for using stale prices. If the cut-off for re-pricing were once a week, collateral prices exceeding one week would be given zero value. If no daily price can be obtained, parties may wish to consider additional haircuts for older quotations (see also the comments above with regard to liquidity and the availability of prices).

3.3 Valuation Disputes

In some instances the secured party places a value on the collateral that is lower than the collateral giver's valuation. Disputes about the market value of collateral held are very rare and tend to happen mostly with exotic collateral. Normally, such disputes are easily resolved upon first investigation, since one party will discover a fault in its pricing information or realize that the wrong haircut was applied. However, if the dispute continues, the normal course of action is for the collateral giver to substitute the disputed collateral. Ultimately, it is the secured party who needs to be satisfied that the market valuation of the collateral is accurate and so the onus is on the collateral giver to convince the collateral taker of the disputed collateral value, or else provide alternative collateral.

The CSDs provide a dispute resolution procedure if one or both parties do not agree with the Valuation Agent's calculation of the collateral. For example, Paragraph 5 of the New York Annex states that, in the event of a dispute, the Disputing Party will notify the other party and/or the Valuation Agent before the close of business on the business day after the demand for or transfer of collateral is made. The transfer of the undisputed amount may still go ahead. The parties must consult with each other in an attempt to resolve the dispute. If they fail to do so, the Valuation Agent must recalculate the value of the collateral. In the case of a dispute involving a Delivery or Return Amount, the recalculation is done as of the Recalculation Date (as defined in Paragraph 12 of the New York Annex). In the case of a dispute involving the Value of any Transfer of Eligible Credit Support or Posted Credit Support, the Valuation Agent will recalculate the Value as of the date of Transfer.

After the recalculation is completed, the parties have been notified and proper demand has been made, the appropriate party is obliged to make transfer of the collateral.

3.4 Collateral Inventory and Substitutions

Collateral Inventory

Prudent collateral inventory keeping suggests that incoming collateral not be accorded any collateral value until its receipt has been confirmed as irrevocable and final. Perfecting the security interest is an important consideration before recognizing collateral value. Outgoing collateral should be subtracted from the inventory as soon as it has been approved for release. This practice mitigates settlement risk.

Substitutions

It is common market practice in the U.S. for the collateral taker to release the original collateral on the same day it receives the replacement collateral, even though most agreements allow for the release of original collateral on the business day following receipt of the replacement collateral. This courtesy to the *collateral giver* is highly valued in markets where collateral is a scarce resource and re-pledging is commonly practiced, but it does mean that extra risk is being incurred by the collateral taker. One can avoid this additional exposure risk by using a delivery versus payment platform as offered by some third part agents or depositories.

3.5 Practical Considerations in Obtaining Collateral Diversification

A well-diversified collateral portfolio is better protected against general market downturns and usually gives the secured party the confidence to agree to a wider range of collateral quality and finer haircuts. However, be aware that if internal policies do not require diversification, you may still required by your regulators to accept diversified collateral.

As mentioned above, the amount of collateral accepted which is issued by the same issuer may be restricted in proportion to the issuer's market capitalization, so that if liquidation is necessary, the proportion being sold does not cause the price to move downwards dramatically, and the entire holding does not take too long to sell. Maximum single issuer concentration limits are best expressed as a percentage of the market capitalization of the issuer. If your collateral portfolio is not well diversified, you might want to limit collateral exposure beyond OECD government and supranational securities to a maximum percentage of the entire collateral portfolio, and exposure to any one industry or country in the same way. If a portfolio is so small as to make the application of other concentration limits difficult, consider asking that it consist entirely of OECD government paper.

There are haircut implications to consider when diversification is not requested. For example, consider the potential results if a collateral portfolio consisted of only one or two particular equities listed on a prime index, and the average volatility for the index as a whole was used as an input in computing the haircut. The actual volatilities for those two equities may exceed the average volatility for the index, so the haircut would not cover their potential price moves. Unless one is accepting a wide range of equities

representative of the index, the index's average volatility should be supplemented, or else the actual volatilities of the equities in question (obtainable from pricing sources such as Bloomberg) should be used to compute the haircuts.

4. COUNTERPARTY RELATIONSHIP MANAGEMENT

4.1 Product Coverage

The exposures of multiple transaction types must be calculated and aggregated on a timely basis. The timing and frequency should match that of the collateral assets securing the underlying transactions. Gathering transaction exposures sometimes requires obtaining information for a large number of transactions and evaluating the exposure against the parameters negotiated in the collateral agreement.

Effective internal guideline manuals for data feed problems, dispute resolution and real time collateral monitoring should be detailed and explicit. Individuals should have access to all data used in the process. In addition, the most effective collateral practitioners in the firm will be trained to understand the underlying products, how the exposure is calculated, and credit and market risk issues. An interdisciplinary (inter-product) approach is key to managing and controlling risk.

4.2 Valuation Methodology for Collateralized Transactions

The valuation methodology of collateralized transactions is, in principle, the same as for the valuation of transactions for other purposes such as client reporting or internal reporting. Valuations for collateralized transactions should be accurate, in the public domain, and independently verifiable by the counterparty to the collateral arrangement.

Theoretically, the valuation of collateralized transactions (or a portfolio of transactions) should reflect how much the net-in-the-money party stands to lose if the net out-of-the-money party defaults. This would be equivalent to an unwind value and would include the costs of any reassignment of transactions in the event of default. However, this poses several problems. First, unwind values are not typically produced by the valuation systems of financial institutions but are rather provided by traders on request. Therefore, unwind values are neither readily available nor independently verifiable. Secondly, both parties engaged in a bilateral secured derivatives arrangement would have a different view of the unwind value of the portfolio which would make the reconciliation of trade values extremely difficult. Third, the extent to which a portfolio is in the money to one party changes as frequently as daily, and a party can move from being in the money to out-of-the-money overnight.

Given these problems, it is practical and widely accepted to MTM collateralized transactions at mid-market. Mid-market values are typically produced by the traders or mid-office valuation systems of financial institutions and are more accessible than unwind or replacement values. Also, mid-market values apply to both parties and do not favor one party over the other as is the case with replacement values.

As a further step towards ensuring that the valuation of collateralized transactions is sound, the MTM values are taken from the same systems that feed the general ledger.

4.3 Frequency & Timing

All transactions and collateral should be valued as of the same close of business date, and the valuation date should be clearly displayed on the valuation statement. This may raise challenges in a global market where business days end at different times in different parts of the world and even, in some cases, overlap.

To avoid the time-zone problems changes in a valuation on day t, all trades and collateral assets should be valued as of the close of business on day-1. This helps to minimize the problem of including transactions which are traded across multiple time zones, especially when transactions in the Asia Pacific region are brought into the equation. It is likely that by following this convention, data for products traded in Asia Pacific will be a day older, however, a consistent approach is generally preferred to the alternative of trying to hit a moving target.

Further, all valuations should be available in a timely manner in order that collateralized exposures can be properly assessed.

4.4 Initial Margin versus Variation Margin

Initial margin is the amount of collateral to be posted by the collateral giver upon execution of a collateralized transaction. This collateral will be held for the life of the transaction(s). The CSD's refer to initial margin as the Independent Amount. Variation Margin is the amount of collateral to be posted to the secured party to cover fluctuations in the market value of the collateralized portfolio. The variation margin is delivered when the exposure exceeds the nuisance or minimum transfer amount. As a general practice, variation margin is usually called the "collateral requirement", most market participants use the term "margin" when referring to initial margin(or independent amount).

From an exposure monitoring perspective, it is important to flag collateral held for initial margin purposes, to ensure margin is not returned along with collateral delivered on the exposure of the transaction.

CHAPTER FOUR

MAINTAINING THE COLLATERALIZED RELATIONSHIP

1. IMPLEMENTING A COLLATERAL AGREEMENT

Before the first movement of collateral can take place, there are several issues surrounding counterparty communication that should be addressed including the method and timing of communication. Effective collateral management depends upon clear communication between your institution/firm and your counterparties. Clear communication is critical for the efficient monitoring of exposures and collateral balances; for making collateral calls; for the accurate reporting of interest amounts and other distributions relating to the collateral; and for reducing the opportunity for disputes.

1.1 Communication Tools

Currently, derivative counterparties use a wide range of communication tools to exchange collateral information. Usage of these tools depends primarily on the type of technology used by each party as well as a party's level of knowledge and experience in collateralization.

Selecting a communication methodology will depend on current market practice as well as an individual party's technological capabilities. However, over time, firms will want to implement technologies that reduce manually intensive efforts, increase timeliness of the exchange of collateral information, and standardize communication between counterparties.

Current Market Practice

A survey conducted in early 1997 by the Communications Focus Group of the Collateral Working Group found that the majority of market participants rely on telephones and fax machines to support existing collateral management programs. The survey also revealed that newer market entrants tend to rely primarily on fax machines and telephones to exchange collateral information. Some of the more experienced institutions are beginning to use Internet mail and Web pages to exchange information but only on a limited scale. It should be noted that even when collateral notification is given via the Internet or other electronic media a follow-up phone call is made for confirmation.

The survey also found that most collateral practitioners are interested in using more advanced communication tools. Some of the newer participants responded, however, that high costs or lack of appropriate systems may be obstacles in implementing more advanced tools. Some of the more experienced institutions also responded that they have Internet security issues, human resource issues and concerns about a client's ability or willingness to use more sophisticated communication mechanisms.

Finally, the survey revealed that the format and level of detail in the collateral information actually exchanged varied widely among counterparties. This often results in numerous follow-up telephone calls regardless of how the collateral demand notice was communicated to the counterparty. Market participants have indicated a need for a standard format and standard level of content to be included when exchanging collateral information. This topic will be discussed in detail later.

The following table analyzes the pros/cons and costs associated with the communication tools presently used by the majority of market participants:

Tools	Process	Pros	Cons	Costs
Telephone	Counterparty gives collateral demand notice or return of collateral call	<ul style="list-style-type: none"> • Direct contact made with counterparty • Exposed party receives instantaneous feedback • All firms have telephones • Does not require any change to current procedures 	<ul style="list-style-type: none"> • Lacks a paper audit trail which is required by many firms • Risk leaving voice-mail that may not be retrieved on a timely basis • Difficult to communicate the detail of a margin call with a customer with heavy volume 	<ul style="list-style-type: none"> • Very low
Fax	Exposed counterparty faxes collateral demand notice or return of collateral notice	<ul style="list-style-type: none"> • All firms have fax machines • Provides a paper trail for both parties • Serves as a confirmation of delivery instructions and collateral/exposure amounts • Ability to send/receive information on a timely basis 	<ul style="list-style-type: none"> • Manual process and very time consuming • May require multiple transmissions because faxes are lost • Does not allow other party to easily manipulate information • Must be followed-up with a phone call to ensure receipt 	<ul style="list-style-type: none"> • Very low

While these communication tools may be sufficient for now, the expected high growth rate in derivative collateralization as well as the increased number of market participants may result in the need for more sophisticated and efficient methods of information exchange. Also, the communication tools widely used today can require multiple verification and reconciliation steps which may result in missed deadlines or costly delays.

Current Market Trends

Several trends occurring in the collateral market may also result in the need for more technologically advanced communication mechanisms. The trend towards global cross-product collateralization will require improved communication tools both internally and with counterparties. As market participants begin to organize global collateral programs they will need to consolidate collateral information across business units. It will also be necessary to exchange this cross-product portfolio information with the counterparty on a timely basis.

In addition, collateral support documents are becoming increasingly sophisticated in order to address customer requirements. For example, many collateral agreements now include time dependent thresholds or complex margining amounts. This again may result in the need for more efficient and accurate communication tools to help exchange atypical collateral information.

Another trend is the emergence of third party custodians such as centralized collateral management services. These new institutions may require specific proprietary software to exchange collateral information with other counterparties who are also members of the service. Services such as Cedel Bank's Global Credit Support Service and Euroclear's Integrated Collateral Management Service enable market participants to come together on a common platform. This allows counterparties to resolve many if not all of the issues typically encountered on a day to day basis without requiring additional external communications.

A final trend is that many derivative counterparties are experiencing a significant increase in trade volumes. As more and more trades are added between derivative counterparties, it becomes increasingly difficult and time consuming to manually reconcile differences in the net exposure, delivery or collateral return amounts. Thus, there is a market need for communication tools that can be used to assist counterparties in reconciling differences for dispute resolution.

In addition to using fax machines and telephones, several of the more experienced collateral practitioners are using or are reviewing the use of Internet mail, SWIFT, Bloomberg, Cedel Bank's Global Credit Support Service and the Euroclear's Integrated Collateral Management Service to help manage collateral information exchange. The following table analyzes each of these communication mechanisms:

Tools	Process	Pros	Cons	Costs
Internet Mail	Exposed counterparty sends electronic mail message via the Internet (E-Mail/cc: Mail) to give demand notice or report deficient collateral level	<ul style="list-style-type: none"> • Automated form of communication that allows user to download information into a spreadsheet • Most firms have this technology • Time stamping eliminates need for follow-up phone call 	<ul style="list-style-type: none"> • Security issues in transmitting information via the Internet • Risk that addressee may not retrieve mail on a timely basis • Mail recipient must manipulate data which may not be in a standard format <p>Requires back-up</p>	<ul style="list-style-type: none"> • Potentially high start up costs • Low cost for firms with electronic mail systems
SWIFT	Exposed counterparty transmits standard message to give demand notice or report deficient collateral level	<ul style="list-style-type: none"> • Confirmation matching capabilities • Standardized format ensures all information is complete before transmission <p>Transmission occurs instantaneously and all incoming/outgoing transmissions are recorded</p>	<ul style="list-style-type: none"> • SWIFT is only available to financial institutions • SWIFT has annual mandatory changes for some categories • Cumbersome to change 	<ul style="list-style-type: none"> • High start up costs • Moderate transmission costs for established SWIFT users
Bloomberg	Exposed counterparty transmits electronic message via Bloomberg to give demand notice or report deficient collateral level	<ul style="list-style-type: none"> • Provides reliable and private electronic messaging capability • Allows for instantaneous electronic messaging globally <p>Enables sender to determine if addressee has read message</p>	<ul style="list-style-type: none"> • Requires a standalone terminal • Currently, primarily used for information purposes and basis messaging to clients • Requires back-up 	<ul style="list-style-type: none"> • High subscription fees

Tools	Process	Pros	Cons	Costs
Global Credit Support Service (GCSS)	<ul style="list-style-type: none"> • Both counterparties transmit aggregate exposure via the GCSS network • Margin calls are automatically calculated in GCSS based on counterparty agreed terms and conditions • Exposure coverage is performed on GCSS and is viewable on-line • Third party pricing of collateral minimizes disputes • Centralized reporting is available with on-line historical data 	<ul style="list-style-type: none"> • Provides reliable and private electronic “intranet” messaging • Allows for instantaneous messaging globally • Available to all market participants • Automated form of communication that allows user to download information into a spreadsheet <p>All firms have the required technology (PC with Windows 3.1 or NT)</p>	<ul style="list-style-type: none"> • Not yet the industry standard connected to all market participants since it was only recently launched 	<ul style="list-style-type: none"> • Modest fees according to the number of counterparty agreements and volume of assets to cover exposures

Tools	Process	Pros	Cons	Costs
<p>Euroclear Integrated Collateral Management Services</p>	<p>Input Both participants forward by fax net credit exposures or credit support amounts to Euroclear (EOC). EOC will match credit support amounts, check eligibility, value collateral, MTM the collateral daily (several automated price feeds are received daily), process margin calls and transfer income proceeds</p> <p>Reports Both participants have access to Euclid (EOC proprietary communication system) reports for their respective derivatives accounts</p>	<p>Available to all EOC participants</p> <p>Integrated into Euroclear's settlement process.</p>	<p>Currently, the input communication platform is still fax based, but Euclid input will be available soon. Euclid reporting is already available.</p>	<p>Low communications costs. The more business participants have across collateral products (triparty repo, derivatives, securities lending and secured loans) the more Participants will benefit from sliding scale discounts and safekeeping discounts based on participant 'family' levels.</p>

A few of the well-established collateral practitioners are researching the potential use of Internet Web pages to electronically exchange collateral information. The following table summarizes the pros/cons and costs of using an Internet Web page:

Tools	Process	Pros	Cons	Costs
Internet Web Pages	<ul style="list-style-type: none"> • Exposed counterparty links into other party's Web site via the Internet • Counterparty enters collateral demand notice in firm's collateral specific home page 	<ul style="list-style-type: none"> • Automated form of communication • Notice recipient can import and manipulate collateral information in spreadsheet • Provides future potential in on-line collateral agreements and ability to view collateral data across areas 	<ul style="list-style-type: none"> • Not all firms have Internet access • Security issues in transmitting proprietary information via the Internet • Potentially requires significant systems administration to support • Requires back-up 	<ul style="list-style-type: none"> • Moderate development and implementation costs • Encryption costs

Summary

The traditional fax machines and telephones widely used by today's collateral practitioners may be sufficient to manage a firm's collateral program. To reduce some of the verification and reconciliation steps, collateral counterparties/clients should provide a detailed level of information when giving a collateral demand notice. This level of detail should be provided regardless of the communication tool used to make the call. Generally, most firms make follow-up telephone calls after giving a demand notice to confirm terms, amounts and delivery instructions.

Communications procedures and media should be well understood both internally and externally. Communications should be regular and provide a clear audit trail. Contingency communications channels should be established, well known and regularly tested. This will ensure that there is no disruption to your collateral program in the event of any failure of the primary communications system.

Many of the larger, well established collateral practitioners are using or are investigating the use of more advanced communication tools such as Internet mail, Bloomberg and SWIFT. These electronic tools can help manage the growing number of daily collateral calls and assist in reconciling valuation differences. Several of these firms are also examining the use of Internet Web pages and collateral management services such as GCSS or Euroclear's Integrated Collateral Management Service as a mechanism for information and collateral exchange. The communication tools in use at a particular firm will depend on the size, sophistication and expected growth of its collateralized portfolio. In addition, the potential costs of implementing more advanced communication tools must be weighed against the productivity and efficiency gains. Finally, a collateral practitioner

must also be aware of his/her institution's/firm's internal system capabilities and any legal and operational risks associated with each communication tool.

1.2 Incorporating New Agreements into a Collateral Program

After receiving a signed copy of a CSD, a collateral manager reviews the terms and begins monitoring the transaction exposure. In order to monitor transaction exposure successfully and efficiently, a collateral manager may find it helpful to establish a policy and appropriate controls for implementing agreements. Establishing written procedures and controls for the monitoring and calling process, as well as an internal notification matrix for payment/counterparty defaults is extremely helpful.

Reviewing new collateral arrangement terms, identifying and gathering all transactions and comparing valuations with the other counterparty can maximize operational efficiency and enhance the long-term relationship with the other counterparty.

Once the operational process is complete, the collateral manager can begin reviewing the MTM amount of the transactions against the credit support terms of each agreement. This process requires parties to:

- identify the entities being collateralized and the types of transactions included in the agreement. A dealer may be trading with several subsidiaries of a corporation. Identifying all transactions for a specific entity is critical to the accurate measurement of exposure. The types of products to be covered may vary by agreement. The range of products can include interest rate derivatives (vanilla swaps, caps, floors, swaptions, exotic options), commodity derivatives, equity derivatives, FRA's, or FX and FX Options. (See Cross-Product Collateralization);
- flag all agreed upon transactions on internal systems and ensure the validity of data feeds and then reconcile the transactions into the collateral system with the valuation source, and/or credit system. How often data feeds should be validated depends on how technologically advanced a firm is. For example, if a firm is able to flag collateralized transactions at an account level, it is not as critical to verify the successful transmission of individual trades as it is if trades are extracted from spreadsheets or can only be flagged at the trade level. Establishing and documenting procedures on the frequency of quality control checks should help minimize inaccurate data feeds.
- review the credit support terms of an agreement. A collateral manager should be familiar with the key credit support terms and their definitions. The following represents some of the key terms, however, a complete list is available in the ISDA CSA User's Guide:
 - *Threshold* - the amount of unsecured exposure a party will assume before calling for credit support. The amount may be expressed in dollar terms or as a percentage (possibly notional amount). Thresholds are typically tiered and are dependent on a party's long-term unsecured debt rating. It is

therefore important for each firm to establish a means to continually monitor counterparty credit ratings.

- *Minimum Transfer Amount (Nuisance)* - the minimum increment amount when transferring credit support. The amount is usually expressed in dollar terms and is often tiered, like the threshold amount. The nuisance amount can also be tied to a counterparty's debt rating.
- *Independent Amount (Margin Amount)* - an add-on amount to exposure that is dependent on the underlying volatility of a transaction or counterparty creditworthiness. The amount may be expressed in dollar terms or as a formula (typically in percentage terms). The margin amount may be specified in the transaction confirmation notice or in the CSD. If an independent amount is not stated it is assumed to be zero.
- *Eligible Collateral* - credit support that is deemed acceptable to both parties. For U.S. participants, eligible collateral will generally be U.S. cash, U.S. Treasury debt, U.S. agency debt, mortgage-backed securities, equities, corporate debt and OECD debt or letters of credit.
- *Valuation Percentages (Haircut Rates)* - the percentage is tied to the type and tenor of Eligible Collateral. The haircut rates are highly correlated to the tenor and price volatility of the collateral. Liquidity is also an important consideration. Highly liquid collateral will tend to have a lower haircut rate than illiquid collateral.
- *Valuation Agent* - the party responsible for calculating the Deliver and Return Amount and notifying the other party. The valuation agent may be either or both parties.
- *Valuation Date* - identifies the frequency of days in which the Valuation Agent is responsible for marking to market the transactions, and credit support amount.
- *Valuation Time* - the time on the Valuation Date by which the Valuation Agent must MTM the transactions. Typically, the valuation time is the close of business on the valuation date.
- *Notification Time* - the time by which the valuation agent must submit a collateral call notice to the other party. The time may vary from jurisdiction to jurisdiction.
- contact the new collateral counterparty in order to;
- exchange information, such as, primary contact names, phone numbers, fax numbers and delivery instructions;

- confirm the products collateralized as well as credit support terms, such as threshold, nuisance, eligible collateral, and notification time with the other party;
- determine a report distribution schedule with the counterparty for collateral positions, transaction valuations and interest distributed. Often, the valuation date specified in the Credit Support Document may differ from the schedule requested by the collateral manager; and
- exchange transaction exposure statements. Reconciling to the other party's market values and ensuring that all transactions are reported will help reduce valuation disputes due to incomplete or inaccurate valuation statements. Identifying and matching your firm's trades to your customer's statement will greatly reduce the time spent on future reconciliation. It should be noted that periodic reconciliations are necessary to ensure that all new transactions are identified and matched well.

1.3 Exposure Monitoring and the Collateral Call Process

The exposure monitoring process can be thought of as the last step in the operational process and the first step in the management of the collateralized relationship

Frequency and Timing

The frequency and timing of exposure monitoring should match the valuation of the transactions and collateral assets. Market participants are increasingly monitoring exposures on a daily basis and begin the monitoring function as soon as valuations are available. Valuations are typically available the morning following the valuation date. The timeliness of valuations is critical to the exposure monitoring process as most agreements will stipulate a deadline for collateral calls. Missing that deadline will result in a twenty-four hour delay in the delivery of collateral.

Mechanics

The MTM exposure of all transactions is calculated as of the close of business on a designated valuation date ("V") and usually available the following business day (V+1). If a party's exposure exceeds the predetermined threshold, the collateral manager will call the other party for collateral. The exposed party faxes a written notice and places a courtesy call requesting the delivery of eligible collateral from the collateral giver within a predetermined time frame, usually V+2 from valuation date. For example, the terms are specified in ISDA's Credit Support Annex (CSA), Paragraph 13(b)(ii-iii) and Paragraph 13(c)(1)-(c)(iv), respectively of the New York Annex.).

On the morning of V+2, the collateral monitoring system provides the collateral manager with updated exposure information as of the close of business on V+1. This exposure is compared with the value of the pending collateral delivery (from the call made on V+1) to determine if additional collateral is needed. Since the delivery deadline for the collateral called on V+1 is on V+2, it is assumed that the collateral will arrive on a timely basis. Therefore, if the new exposure exceeds the pending collateral delivery by \$X, and if \$X is greater than the Minimum Transfer Amount, then a new collateral call is made to the

counterparty before the notification time on V+2 to deliver \$X additional collateral by the close of business on V+3.

This process continues on a daily basis, with pending deliveries and returns from the previous day always taken into consideration in the current day's determination of the collateral call amount.

1.4 Application of the Collateral Call Process

Let's assume that the Credit Support Annex states the following terms:

Party A	Party B
Threshold: \$20,000,000	Threshold \$15,000,000
Minimum Transfer Amount: \$1million	Minimum Transfer Amount:
\$1million	

Notification Time: 1:00 p.m. New York time
Delivery Time: One business day following notification
Eligible Collateral: US Treasuries
Percentage Valuation: Residual maturity < 5 years 98%
Residual maturity > 5 years < 10 years 97%
Residual maturity > 10 years 95%

As of the first business day (Monday), the exposure amount is \$25 million (in the money for Party A). Party A will retrieve the exposure information from the collateral system on Tuesday morning and will notify the other party (Party B) of the deficient collateral amount and request eligible collateral with a market value of \$10 million prior to 1 p.m. on Tuesday for delivery Wednesday. Party B will review and confirm the exposure amount using its internal valuation and collateral system on Tuesday afternoon and confirm the collateral delivery information to Party A either Tuesday afternoon or Wednesday morning.

On Wednesday morning both parties evaluate the exposure amounts as of Tuesday. The exposure amount is compared with the pending collateral delivery for Wednesday to determine if the adjusted exposure amount exceeds the Minimum Transfer Amount. If the new exposure amount exceeds the nuisance another collateral call is made for delivery Thursday.

In instances when the two parties do not agree on the collateral requirement amount, the CSDs require the collateral giver to deliver the undisputed amount to the exposed party. It is up to the two parties to resolve the dispute, see section below titled, "Dispute Resolution".

Potential Settlement or Counterparty Default Risk

Even though the collateral called on Tuesday is expected to arrive by the close of business Wednesday, Party B is not able to confirm the delivery until Thursday morning. If, at that point, it is determined that the collateral did not arrive as required, the collateral manager notifies the appropriate internal departments (Legal, Credit, Trading) that a default for

non-delivery of collateral has occurred. If a decision is made to declare a default, then written notice of default must be given to the counterparty. The CSDs do not allow the notice of default to be delivered by facsimile transmission or e-mail, therefore it must be sent via courier (for next day delivery). Notices of this type of default require an original signature. On the assumption that most counterparties are located outside the delivery zone of a same day courier service, the earliest the notice of default can be expected to arrive will be V+4.

Both the New York Annex and the English Deed allow two business days to cure before the party giving notice of default can terminate the deal, close out the transactions, net the exposures and off-set the exposure against the collateral. Note, however, that the English Annex does not include any such cure period and the party giving notice of default would therefore rely on section 5 (a) (i) of the ISDA Master Agreement. Therefore, in relation to both the New York Annex and the English Deed, assuming that the counterparty receives the notice of default on V+4, the counterparty has until the close of business on V+6 to provide the original collateral requested on (based on the exposure as of VO).

Finally, the non-delivery of collateral is continually confirmed throughout the cure period on the morning of V+7. Upon such confirmation, the next action required is to give notice to the counterparty that V+7 was declared an Early Termination Date in respect of all outstanding transactions and then follow the procedures for determining the amount of exposure. In most instances, the market quotation method applies. Therefore the non-defaulting party would have to seek quotes from four Reference Banks. The quotes would probably be requested to be provided as of V+8, assuming that this process requires lead time. Once quotes are provided the transactions would be closed out and the net exposure would be set-off against the collateral.

The standard terms of the ISDA Master Agreement together with the CSDs may cause a delay of at least 8 business days from the date of exposure determination until termination, if there is an event of default due to non-delivery of collateral when due.

Substitutions

Unless otherwise provided in Paragraph 13 of the New York Annex which may provide that the consent of the Secured Party (collateral taker) must be obtained prior to any substitution of collateral, the secured party (collateral taker) is required to exchange posted collateral upon notification from the collateral giver. The CSDs state that the secured party must transfer collateral to the collateral giver not later than one business day following the receipt of the replacement collateral by the collateral taker. The current market practice, however, differs from that set-out in the documentation. As a courtesy to fellow collateral practitioners, most substitutions occur simultaneously. The collateral is transferred to the collateral giver upon receipt of the substitute collateral. The secured party should always ensure that the substitute collateral is eligible collateral, and that the post haircut market value is equal to or greater than the original credit support amount.

The timing of the collateral substitution is especially critical when collateral is rehypothecated, sold or used in any manner by the secured party. The collateral giver must adhere to the notification time (Paragraph 13(c) of the New York Annex or Paragraph 11(c) of the English Annex.).

Typically, the collateral giver makes a courtesy call to the collateral holder one day prior to the substitution day, advising of a potential substitution. If the collateral is rehypothecated, this notification allows the collateral holder sufficient time to initiate the return of the collateral. As soon as the information is available, the collateral giver notifies via phone and fax. The collateral giver provides information such as, collateral type, amount and delivery date. Upon the collateral taker's approval and receipt of the substitute collateral, the original collateral is released to the collateral giver.

2. DISPUTE RESOLUTION

A valuation dispute occurs when two parties disagree on the net exposure amount. The source of the discrepancy may be the transaction exposure amount, the collateral asset amount, or the credit support terms. Establishing internal procedures for researching and resolving disputes may be helpful. The following is a general checklist that may aid in resolving disputes in a timely and efficient manner:

- compare credit support information, such as collateral positions, market prices, haircut rates, and margin requirements with the other party;
- request a valuation report from the other party and compare the total number of outstanding transactions, if possible. If this is not possible, check for recent transactions that may have been omitted from either statement; and
- compare the portfolios at the product type level. All trades from the secured party's statement should be identified and trade values should be compared.

When the source of the discrepancy has been identified, the disputing party will report findings to the collateral taker and the undisputed amount will be confirmed for delivery. The exposed party will reconfirm the reported discrepancy and decide whether the disputed amount is significant enough to institute the dispute resolution procedures described in the dispute resolution provisions of the CSDs.

What is the source of many valuation disputes? Of surveyed collateral managers, the following reasons were stated:

- the exposure report does not reflect all transactions. In many instances a new transaction may not be reflected in the aggregate exposure amount;
- mark-to-model differences;
- the cumulative effect of aggregating trades into portfolios of 300 deals or more can be significant. For example, if a portfolio is comprised of 500 deals and each transaction differs by \$10,000 to the other party, the result could be a \$5 million valuation difference. Aggregating is the most prevalent source of valuation disputes. As the number of collateralized exposures monitored has increased

exponentially over the past five years, valuation disputes have become more prevalent.

Most valuation disputes can be resolved quickly when overlooked transactions are the cause. By comparing portfolios, collateral practitioners can quickly identify missing transactions and deliver collateral within the predetermined time frame. If, however, the cause of the dispute is due to aggregating the portfolio or mark-to-model differences, many collateral managers establish informal dispute resolution methodologies rather than following the CSDs. The CSDs outline dispute resolution terms, but in most instances, independently revaluing the transactions does not resolve the problem.

The industry has not established a market practice for resolving valuation disputes. Resolution methods are firm dependent and usually addressed on a case by case basis. If valuation disputes methods are not included in the negotiation process, incorporating methods in your collateral program policy and procedures enables the collateral manager to resolve disputes in a timely and efficient manner. Common resolution methods to consider are as follows:

- a mutually agreed upon tolerance level is including in the CSD. The level may be expressed as a percentage, in dollar terms, or as a delta;
- each firm will “split the difference” of the disputed amount and will deliver only the undisputed amount as required by the CSD;
- both parties agree to the undisputed amount only and re-value portfolios again the following day for comparison. If an exposure amount differs by a consistent amount, this amount is used to calculate a tolerance level.

All collateral practitioners surveyed have exercised one or more of the above mentioned methods.

3. DISTRIBUTION MECHANISM FOR VALUATION STATEMENTS

Valuations for the purpose of making a collateral call should be easily reconcilable by the counterparty to the collateral arrangement and valuation should be distributed in a manner which facilitates this.

Valuation statements for collateralized transactions and collateral assets should accompany any margin calls or at a minimum, should be available on the request of the counterparty. The valuation statements should display reference data for each trade in a clear and recognizable manner such that the counterparty is able to easily identify trades and reconcile the mark-to-market valuations to their own records. Examples of such reference data include:

- trade identifier of both parties;

- effective date;
- maturity date;
- notional;
- currency; and
- strike rate.

Further, valuation statements should be distributed in such a way as to facilitate reconciliation electronically such as via the exchange of computer disks or by using Internet web pages. If more traditional mechanisms such as faxing are to be used, the collateral call statements should be in a format which is easy for the parties to reconcile their trade information. Where possible, parties should use a common file protocol using the same layout and same reference data.

4. LEGAL DISCLAIMER

All valuations for collateral purposes should be accompanied by a legal disclaimer. Parties should refer to their legal advisors to determine the content of their legal disclaimer.

SUMMARY CHECKLIST

ISSUES CONCERNING THE COLLATERALIZED RELATIONSHIP

(I) COLLATERAL ELIGIBILITY (Chapter Two, Section 3)

- (a) Set a (credit) policy whether at the corporate or client level on the types of assets that are acceptable/not acceptable for your firm.
Collateral need not satisfy any other eligibility rules besides certain regulatory restrictions, such as the own-issues rule for U.S. Banks.
- (b) Note that collateral which is positively correlated with the creditworthiness of the *collateral giver* (such as own name securities) is usually not accepted, regardless of what other eligibility rules it satisfies. Accepting such collateral increases counterparty credit risk.
- (c) Collateral which is directly and negatively correlated with the exposure (i.e. whose value will directly decrease as the exposure increases) should not be acceptable, regardless of what other eligibility rules it satisfies.

(II) COLLATERAL ASSETS (Chapter Three, Sections 3 and 4)

- (a) Establish a policy on collateral valuation frequency.
Many large financial institutions re-value collateral assets daily, while corporates and end-users, re-value on a periodic basis such as weekly, biweekly and monthly.
- (b) Bid prices, or the nearest equivalent available (such as Mid), should be used as the starting point for valuing collateral.
- (c) It is preferable that pricing sources be independent, electronic, widely recognized and agreed in advance with your counterparty/client.
Bloomberg, Reuters and Telerate are among the many available pricing sources. Prices are usually gathered in the afternoon or at the close.
- (d) Select the proper measurement of tenor for securities for haircut calculations. Tenor of collateral assets is the residual maturity of the instrument, not full tenor at issuance. The benefit to using residual maturity is that the haircut will be better correlated to the volatility of the collateral asset.
- (e) Decide whether accrued interest should be included in the market value of collateral assets.
Most financial institutions prefer to include accrued interest in their calculations. One of the benefits is that the interest will reduce the collateral requirement for the collateral giver.
Including accrued interest is preferable for many financial institutions.

(III) OPERATIONAL POLICY AND PROCEDURES (Addressed throughout the Guidelines)

- (a) Set procedures for the monitoring of collateral movements and position tracking (Chapter Three, Section 2).

Conservative collateral inventory keeping means incoming collateral is not given collateral value until its receipt has been confirmed as final and irrevocable. The value of outgoing collateral should be subtracted from the total collateral value as soon as it has been approved for release.

- (b) Identify key staff from Credit, Legal, Documentation and Trading for disseminating collateral information/problems on a global level (Chapter One, Section 5).

Creating a global communication matrix for disseminating information for collateral defaults/disputes or any irregularities may be helpful if these situations arise. The preferred method of communication is firm dependent.

- (c) Identify custodial contacts and select operations staff authorized to release/accept collateral (Chapter One Section 5).

Submitting an authorized signatory list to the custodian ensures that the custodian acts only upon notices initiated by authorized personnel.

(IV) VALUATION METHODOLOGY FOR TRANSACTIONS (Chapter Three, Section 3)

- (a) Collateralized transactions should be valued in accordance with the same principles that apply to the valuation of transactions for standard purposes such as accounting and month end reporting.

- (b) Collateralized transactions should be valued at mid-market. The value for a collateralized transaction should be the same as the value which is recorded in your firm's books and records.

- (c) Know the methodology used to value the transactions and be prepared to publish it and explain it to the counterparty.

- (d) The valuation date should be clearly displayed on the valuation statement.

(V) COLLATERAL CALL PROCESS (Chapter Four).

- (a) Establish procedures and format for information contained in collateral call/return/substitution notices.

If possible, valuation statements should accompany all collateral call notices. Valuation statements should display clear reference data to facilitate reconciliation.

- (b) Review the various modes of communicating collateral information, fax, e-mail, diskettes., etc. Familiarize yourself with clients' communication preferences/abilities. *Collateral call statements should be made available electronically, if possible. Select a mutually agreed upon communication tool with your client.*

- (c) Draft a legal disclaimer for collateral and transaction reports. A disclaimer ensures that the report is used only for purposes stated. *The legal department of individual firms should be contacted to determine the appropriate content.*

APPENDIX 1

FOCUS GROUP MEMBERS AND CONTRIBUTORS TO THE GUIDELINES FOR COLLATERAL PRACTITIONERS

LIST OF FOCUS GROUP MEMBERS WHO CONTRIBUTED TO THE GUIDELINES FOR COLLATERAL PRACTITIONERS

Listed below are the Collateral Working Group members who participated in the Focus Groups and contributed to the Guidelines. We have listed the individuals and the institutions they worked for at the time they participated in the Focus Groups.

ISDA greatly appreciates the efforts of everyone connected with the Guidelines project. They and their institutions were responsible for the success of the Guidelines and the benefit to the industry.

NAME	INSTITUTION
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Kishwer Aziz	Citibank, N.A.
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Karen Becker	Dresdner Bank
John Beneke	Morgan Stanley & Co.
Phillip Bokovoy	Bank of America
Angela Brojan	Bear, Stearns & Co., Inc.
Chris Brown	Barclays Bank
Claude Brown	Clifford Chance
Mark Anthony Brown	Deutsche Morgan Grenfell Inc.
Chris Bucchino	Morgan Stanley
Ariadne Capsis	Bear, Stearns & Co., Inc.
Michael Clarke	J.P. Morgan & Co.
Alan Cole	CrossMar, Inc.
Richard Conway	Lloyds Bank Plc
Dan Cushing	Bankers Trust Company
Catherine Daga-Jeanperrin	Banque Paribas
Penny Davenport	J.P. Morgan & Co.
Suanne Dunn	Union Bank of Switzerland

NAME	INSTITUTION
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Joan Goody	SunGard Capital Markets, Inc.
Stephanie Grady	Citibank, N.A.
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Chris Haines	Deutsche Morgan Grenfell, Inc.
Patrick Harris	Goldman Sachs & Co.
Carine Jauffre	Societe Generale
Phillip Langton	SBC Warburg
Gavin Lee	First National Bank of Chicago
James Lettiere	Paribas
David Maloy	Warburg Dillon Read
Vicky Manasses	First Chicago NBD
Christiana Michaelides	Hammond Suddards
Edward Murray	Allen & Overy
Dean Naumowicz	Allen & Overy
Ronan O'Shea	Bankers Trust Company
David Prichard	Natwest Markets
Alistair Smith	Union Bank of Switzerland
Neil Smith	Abbey National Financial Products
Mel Strauss	Cedel Bank
Jeff Struckhoff	UBS Securities
David Suetens	Euroclear
Stephanie Swanton	SunGard Capital Markets, Inc.
Kevin Sypolt	Warburg Dillon Read
Teruo Tanaka	Industrial Bank of Japan, Ltd.
Robert Virgilio	S.W.I.F.T.
Tom Wiese	Cedel Bank